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# **Malaysia's Potential Revolution: Embracing Gold-Backed Cryptocurrency into International Net Settlement via Blockchain Could Transform Economic and Financial Resilience**

## **Potensi Revolusi Malaysia: Merangkul Matawang Kripto Bersandarkan Emas ke dalam Penyelesaian Bersih Antarabangsa melalui Blockchain Dapat Mengubah Ketahanan Ekonomi dan Kewangan**

Irma Naddiya Binti Mushaddik \*, Abdul Wahed Jalal Nori\*\*

### **Abstract**

This research delves into the potential of a gold-backed cryptocurrency as a strategic instrument for international net settlement, leveraging blockchain technology, and assesses its global economic implications. Through a comprehensive evaluation of the efficiencies derived from integrating a gold-backed cryptocurrency, this study critically examines the prevailing use of fiat currency in international net settlement, laying the groundwork for fortified financial resilience within Malaysia's Islamic finance framework. To fulfil the study's overarching objective, a qualitative research methodology was meticulously applied, encompassing content analysis alongside insightful semi-structured interviews. The argument put forth underscores that a cryptocurrency backed by gold represents a superior alternative to fiat currencies in facilitating international net settlement through the robust medium of blockchain technology, ushering in an era

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characterized by compatibility and enhanced efficiency. Furthermore, this article posits that the revolutionary potential of blockchain will permeate Malaysia's Islamic financial system, aligning with Islamic finance principles and accelerating international net settlement. This integration is poised to usher in an unprecedented era of growth, efficiency, and innovation while adhering to Islamic financial ethics.

**Keyword:** Gold, Gold Standard, Cryptocurrency, International Net Settlement, Blockchain, Financial Sustainability.

**Abstrak**

Penyelidikan ini menyelidiki potensi mata wang kripto yang disokong emas sebagai instrumen strategik untuk penyelesaian bersih antarabangsa, memanfaatkan teknologi blockchain, dan menilai implikasi ekonomi globalnya. Melalui penilaian menyeluruh terhadap kecekapan yang diperoleh daripada penyepaduan mata wang kripto bersandarkan emas, kajian ini secara kritis mengkaji penggunaan lazim mata wang fiat dalam penyelesaian bersih antarabangsa, meletakkan asas bagi daya tahan kewangan yang diperkukuh dalam rangka kerja kewangan Islam Malaysia. Untuk memenuhi objektif keseluruhan kajian, metodologi kajian kualitatif telah digunakan dengan teliti, merangkumi analisis kandungan bersama temu bual separa berstruktur yang bernas. Hujah yang dikemukakan menggariskan bahawa mata wang kripto yang disokong oleh emas mewakili alternatif unggul kepada mata wang fiat dalam memudahkan penyelesaian bersih antarabangsa melalui medium teguh teknologi blockchain, yang membawa kepada era yang dicirikan oleh keserasian dan kecekapan yang dipertingkatkan. Tambahan pula, artikel ini menyatakan bahawa potensi revolusioner blockchain akan meresap dalam sistem kewangan Islam Malaysia, sejajar dengan prinsip kewangan Islam dan mempercepatkan penyelesaian bersih antarabangsa. Penyepaduan ini bersedia untuk memulakan era pertumbuhan, kecekapan dan inovasi yang belum pernah berlaku sebelum ini sambil mematuhi etika kewangan Islam.

**Kata Kunci:** Emas, Piawaian Emas, Mata Wang Kripto, Penyelesaian Bersih Antarabangsa, Rangkaian Blok, Kemampuan Kewangan.

## Introduction

Today, several industries are turning towards blockchain-based business payments in search of simpler and faster transactions. Daily projects are being launched all around the world to implement distributed ledger technology for payment processing. All financial institutions—individual banks, Fintech firms, central banks, and SWIFT—are experimenting with blockchain-based payment systems. Blockchain technology is also being considered by individual institutions, including Citi Bank, which has built three different blockchain projects that have been tested across various banks<sup>1</sup>. For instance, despite not having formal bank accounts, many people in Kenya use mobile platforms to conduct financial transactions. More people are adopting blockchain-based services for various forms of payments, according to studies and polls<sup>2</sup>.

More than 200 all over the world banks have established themselves with full-scale commercial blockchain solutions, according to the most recent report from the IBM Institute for Business Value and The Economist Intelligence Unit. And the reason that blockchain technology is becoming more and more popular for handling international payments is due to the speedy, secure, and cost-effective services that it offers. The use of encrypted distributed ledgers simply eliminates the need for middlemen in the business and improves real-time transaction verification. In a nutshell, blockchain technology satisfies all of a business's payment-related requirements<sup>3</sup>.

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<sup>1</sup> Allison, Ian. "Codename Citicoin: Banking Giant Built Three Internal Blockchains to Test Bitcoin Technology." *International Business Times UK*, 2015. <http://www.ibtimes.co.uk/codename-citico-in-banking-giant-built-threeinternal-blockchains-test-bitcoin-technology-1508759>.

<sup>2</sup> S. Aketch, F. Mwambia and B. Baimwera. "Effects of blockchain technology on performance of financial markets in Kenya." *International Journal of Finance and Accounting* 6, no. 1 (2021): 1 – 15.

<sup>3</sup> Marshall, A., Dencik, J. and Singh R.R. "Open innovation: digital technology creates new opportunities." *Strategy & Leadership* 49, no.3, (2021): 32-38.

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The initial intention of blockchain was to support the virtual currency bitcoin. But as of right now, everything has changed drastically. There are many apps available now that have nothing to do with bitcoin. Today, there are many different cryptocurrencies, some of which are more stable and provide more alternatives. They never seem to complement each other well in terms of what they have to offer. Ethereum vs. EOS or Bitcoin vs. Ethereum. Every cryptocurrency offers a unique set of benefits that assist businesses in numerous ways<sup>4</sup>.

Due to the escalating frauds, increased intermediary intervention, protracted delays, and total lack of conduct transparency, the practice of conventional banking is currently seen as problematic and out of date. Customers and commercial organizations are now forced to hunt for other asset management and exchange methods. The benefits to commercial organizations of using blockchain to support cryptographic payments are unimaginable.

Cryptocurrencies have certain blockchain advantages, like decentralization and the public ledger. Cryptocurrencies never become blocked for any reason, including bank rules, bank norms, or let's say cross-border restrictions, in contrast to traditional currencies that banks circulate. The enterprises may launch swift and safe international transactions thanks to cryptocurrencies. Additionally, cryptocurrency values increase over time independent of strong external pressures like politics or major corporations. Blockchain-based payments can satisfy the bank's needs for more security, quicker processing, and more extensive audit information, not to mention a fair deal of client happiness<sup>5</sup>.

No matter how much or how little money you make, cross-border transfers are always a problem. The regulatory requirements of two countries always rile up multinational corporations and transnational undertakings. There are several obstacles in the way of cross-border transactions, from dealing with excessive financial costs from banks to

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<sup>4</sup> J. Bhosale and S. Mavale. "Volatility of select Crypto-currencies: A comparison of Bitcoin, Ethereum and Litecoin." *Annual Research Journal of SCMS, Pune* 6, (2018).

<sup>5</sup> Jei Young Lee. "A decentralized token economy: How blockchain and cryptocurrency can revolutionize business." *Business Horizons* 62, no. 6 (2019): 773-784.



time delays brought on by physical distance. Blockchain technology, on the other hand, enables firms to enhance their cross-border payments by bringing about more security, faster exchange rates, and reduced conversion costs. Smart contracts can also be used to support cryptographic payments, giving the sender and receiver even greater assurance. Additionally, the blockchain's ledger is more current than the ledger used by conventional banks. Blockchain acts as a catalyst for creating a single, transparent record of payments. The ability of blockchain to keep track of payment histories and automatically fulfil invoices and payments will be further enhanced by the integration of IoT and blockchain<sup>6</sup> (Qing Deng,2020).

Tracking of business operations such as deals and accounts are the biggest challenge and greatest hurdle any business face. Fortunately, with blockchain both these hurdles can be subdued as blockchain can quicken the account payable and receivable processes. The immediate ledger update, moreover the added level of security while no modifications or alteration can be made in the block, unless the individual is the participant of the chain. Even if any data change is made, it gets immediately notified to other participants, stringing additional degree of security, makes blockchain a right-fit solution for net settlements<sup>7</sup>.

Because of these operational advantages, huge foundations, for example, Mastercard and Visa have been executing blockchain in their data stockpiling, cross-border exchanges, and payment framework. Moreover, the Wallets fueled by blockchain, store the private keys and public addresses of a customer, making it easier for accessing assets on the blockchain. This is not the case of traditional setup. One has to go through several steps and hands to reach certain point in seek of desired asset. However, with blockchain the access is made simpler. Simply entering the key, one can get easily accessed to the desired data<sup>8</sup>.

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<sup>6</sup> Qing Deng. *Application Analysis on Blockchain Technology Cross-border Payment*. Proceedings of the 5th International Conference on Financial Innovation and Economic Development (ICFIED 2020). Advances in Economics, Business and Management Research, 2020.

<sup>7</sup> Ibid

<sup>8</sup> Ibid

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Also seeing from the perspective of a bank account, the cryptocurrency wallet doesn't depend on a solitary money related organization or institution. Therefore, the wallet users are freed from the troublesome limitations and confinements identified with traditional banking<sup>9</sup>.

From end users' lack of familiarity with distributed ledgers and digital currencies to the introduction of a completely new system that alters how assets are stored and payments are performed. These will transform how society perceives money and existing activities that aren't included in GDP statistics, making prices and trading more transparent. Compared to distributed ledgers, which are only usable with a sovereign currency, this perspective is far broader<sup>10</sup>.

This is parallel with the research objective which is to identify current situation of using paper money in international net settlement and to evaluate the strengths of using cryptocurrency backed by gold and for international net settlement via blockchain technology which may give rise to determine the benefits that lead to implementation in term of monetary policy and Islamic finance aspect. Therefore, the objectives of this research are: 1) To identify current situation of using paper money for international net settlement to fortify future financial sustainability. 2) To evaluate the strengths of using cryptocurrency backed by gold for international net settlement via blockchain technology to fortify future financial sustainability.

### **Literature Review**

#### **History of Cryptocurrency and Blockchain**

Blockchain the underlying technology infrastructure behind Bitcoin, was released to the world in 3rd January 2009 by Satoshi Nakamoto after writing his seminal white paper 'Bitcoin - a-peer-to-peer

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<sup>9</sup> H. Albayati, SK Kim and JJ Rho. "A Study on the Use of Cryptocurrency Wallets from a User Experience Perspective." *Human Behavior and Emerging Technologies* 3, no. 5 (2021): 720-738.

<sup>10</sup> David Lee Kuo Chuen and Ernie Teo. *The New Money: The Utility of Cryptocurrencies and the Need for a New Monetary Policy*. Disintermediation Economics, 2021: 111-172.

paper cash transaction system'. Having been annoyed at how banks could privatise profit, but socialise losses after the financial meltdown in 2008, Satoshi wanted to create a new form of money one that could be hypersensitised to corruption, power politics and economic cycle. A form of money that distinct advantages over the old, slow form of money we take for granted. Bitcoin has been called many things like internet money, digital gold, fast money, and more negatively Ponzi scheme. For the first time in IT history we now have access to a standard, open, decentralized immutable ledger that anyone can transact globally without needing permission. We just need to trust the defined and provable maths highlighted in Satoshi's white paper<sup>11</sup>.

Satoshi Nakamoto has given us the ability to create a pure digital currency, one that has been desire of the banking industry for many years. Being programmable, bitcoin and other cryptocurrencies using blockchain start working in different financial landscape. They can be programmed to allow all kinds of economic activity, often without a middleman, agent or any human arbitration of any kinds. This programmability without having to trust anyone is impossible with current Paper money. In a digital age of programmability may become one of cryptocurrencies important advantages. Bitcoin has a very simple scripting programming language, but other cryptocurrencies are trying to deliver more complex operations in secure blockchain environments, validated by computers all around the world. As developers attempt to improve Bitcoin, a wave of innovation has come allowing anyone to deploy new technology<sup>12</sup>.

Bitcoin came out of the 2008 international financial crisis when people begin to question the ability of banks to manage their money. Cryptocurrencies secured by blockchain will gradually creep into our lives more and more and people now realise that cryptocurrency is not a scam, a Ponzi scheme or going to crash into zero. Its works, its secure and it revolutionising the next digital economy. This is what the blockchain environment is. Currently, in year 2019 blockchain has building out of the

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<sup>11</sup> Anthony G.Parker. "Blockchain, Bitcoin and the Rise of New Money," *ITNOW* 60, no. 4 (2018): 8-13.

<sup>12</sup> Amy Whitaker. "Art and Blockchain: A Primer, History, and Taxonomy of Blockchain Use Cases in the Arts." *A Journal of Entrepreneurship in The Arts* 8, no. 2 (2019).

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decentralized infrastructure that will run future Web 3.0 applications that can never be shut down and controlled<sup>13</sup>.

However, this is only the tips of the iceberg. It is not simply a currency or a way to pay someone on the internet. There is a lot more going on than just payment. With programmable blockchain, combining the power of a distributed infrastructure with decentralized governance and autonomous consensus rules that enable trust between peers, we achieved completely new and ground-breaking way to create and distribute value. Every protocol previously created didn't have the concept of digital scarcity. It's difficult to transfer an asset from one person to another and proved that it completed successfully in digital form. Now it can be. You can expect a wrapping of innovation in new behaviours based on this provability of asset transfer, and increased value. Once you can prove the provenance of an asset on the decentralised network, and where it originated it becomes much more valuable<sup>14</sup>.

The traditional industries are finding it very hard to compete with decentralised peer-to-peer network. There is no cost structure on the other side, it just peer-to-peer network. Blockchain is the revolution of digital money and asset. In term of payment, business use crypto as payments do not need a fraud department, a disaster recovery process, payments to third parties like Mastercard and Visa or a large team of accountants. Because blockchain give us a way of transacting value globally in a far more public and transparent way<sup>15</sup>.

Trust and reliability are the two critical components of third-party applications that can act as middlemen when it comes to financial transactions, shopping and more. These apps charge us for business transactions done through their platform. Blockchain gives us the authority to execute a financial transaction without paying a third party. It has a peer-to-peer network with self-executing contracts that ensure

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<sup>13</sup> C Chen, L Zhang, Y Li, T Liao, S Zhao and Z Zheng. *IEEE Open Journal of the Computer Society* 3 (2022): 233 – 245.

<sup>14</sup> MJ Casey & P Vigna. *In Blockchain We Trust*. MIT Technology Review, 2018.

<sup>15</sup> L Tredinnick. "Cryptocurrencies and the blockchain." *Sage Journal Business Information Review* 36, no. 1 (2019).

payments between customers and applications. There are new platforms such as BigchainDB and Hyperledger, which can be used by blockchain developers to gain scalability and permission benefits. BigchainDB solves the scalability issues faced in implementing blockchain technology. Hyperledger enables the creation of private permissions for blockchains. Companies are leveraging the benefits of blockchain with cloud-based implementation. Leading companies such as Amazon, IBM and Microsoft are providing cloud-based development spaces to software companies. Blockchain as a Service or BaaS, offers various benefits to companies and help them in creating viable solution to cater to business needs<sup>16</sup>.

When an application is developed using blockchain technology, the user has the authority to view and add a record to the software database. The user can't modify or delete any data record, which improve integrity of the entire process. Another benefit of blockchain is that it stores data in transparent ledgers and data traverses through peer-to-peer networks. The increase of mobile application with enhanced security and higher quality has led to the rise of blockchain-oriented apps. The key features of blockchain oriented software (BOS) are listed below:

- 1) The data is replicated and stored in thousands of systems that ensure data security. Each node has a copy of the blockchain code.
- 2) It checks the transaction requirement before processing for validation.
- 3) It records transaction in a sequential log of interlinked blocks which are created by consensus algorithm.
- 4) Transactions are based on public-key cryptography.
- 5) The OS serves as the base for BOS engineering.

### **Seigniorage Problem of Paper money**

This brings us to a next point: the role of seigniorage in a monetary system. The authors mention the issue and it is much talked about in Meera's writings. He has in a paper written with Larbani (2006) argued

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<sup>16</sup> H. Albayati, SK Kim and JJ Rho. "A Study on the Use of Cryptocurrency Wallets from a User Experience Perspective." *Human Behavior and Emerging Technologies* 3, no. 5 (2021): 720-738.

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that paper money system, because of *seigniorage* plus interest, is not compatible with the objectives of the Islamic *Shari.ah* while commodity money like gold and silver alone is. After the collapse of Bretton Woods in 1971, the US dollar, like other world currencies, became a fiat currency which is backed by nothing. Since then, the world has operated under a “pure” paper money system. Since US dollar being one of the vehicle currencies, the central banks worldwide hold US dollars as reserves. (Larbani, 2006). According to Khalid Noorshah in his article *The Islamic Gold Dinar Movement in Malaysia*, he address the important to implement gold dinar and silver dirham in order to be free from enslavement of the banking and finance fraternity and the usurious nature of paper money, to avoid speculation and manipulation of international currency traders, freedom from the dominance of the others and oppression from developed nations and deceiving practices and intentions by the so called super powers especially the United States of America. More so because the American dollars were deemed the currency of world and in the case of oil, a currency imposed, but most importantly it was call to submit to Allah’s decree where He and His prophet has declared war on the usurers<sup>17</sup>.

In a speech *The Dinar – The Way Forward*, at Putra World Trade Centre (PWTC) on 24 July 2007 Tun Dr. Mahathir Mohamad said, Federal Reserve Bank is controlling the country’s financial system and US Dollar are absolutely no security features. Thus, our prosperity could be undermined simply by devaluing our Ringgit against the US Dollar. Truly the International Monetary System and the banking system are not only means of financing international trade but are also instruments for exerting power over the countries of the world. Government and government leaders are really powerless. Then the rulers of the world are the men who control the Central Banks of the so-called powerful countries.

According to Dr. Mahathir, with the use of gold some of the power Western Banking System and the US Dollar would be diminished. With this the clout of these powerful countries would also diminish. On the other hand, by refusing to use the Gold in net settlement, the rich Muslim

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<sup>17</sup> Al-Quran: Surah Al-Baqarah:297.

countries would actually be impoverishing and weakening themselves, exposing themselves to pressures by the Western powers and as has been pointed out they would actually be financing the killing of Muslims in Palestine, Iraq and Afghanistan. Of course, it will never be able to replace the old system completely. But by having an alternative will always force the original to adopt good practices. We will see less of the fraud and the manipulations. We will be able to fend off much of the oppression of the weak by the rich and strong using the valueless paper money that they have invented. False wealth will no longer be able to rule the world.

However, it may be rewarding to begin with a look at the historical origin of the term to understand its import in the current circumstances. In origin, seigniorage meant something claimed by the sovereign or a feudal lord as his prerogative in relation to society. In the context of money, it was the percentage share of the crown in the bullion people brought to the royal mint to get converted into coins. Nowadays the term is applied to all money, including the credit banks create. A fiat currency is money that has no intrinsic value of its own or is not backed by anything real like gold or anything of value for that matter. Paper money can be in two forms; currency notes and coins (state-issued money) and accounting money such as cheques and electronic money which is created by commercial banks through loans. However, almost in every nation, a larger proportion of the money stock is represented by the accounting money.

As the proportion of credit money in a nation increases it has some implied loss to the economic agents. Though the credit money is created out of thin air, it is not available for free of cost. Therefore, the credit money should be repaid with some interest charges where the money needed to settle the aggregate interest in the economy does not exist in the system. Hence, the economic agents are forced to repay their loans in the form of real goods and services. In other words, when the interest amount is not existed in the system, for sure people will default on their loans and real payment of interest takes place when banks confiscate collateral or other assets of them. Meera (2011) explains this as follows:

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*“Seigniorage is the value given to paper money over and above its intrinsic value. For example, when the bank creates RM1 million in the form of electronic money, the seigniorage is RM1 million, since the cost of creating an electronic record is negligible. On the other hand, if a RM1 coin has 20 sen of metal content in it, then the seigniorage is 80 sen. Seigniorage is the benefit obtained by the first user of the paper money, that is, the bankers in the case of credit money, and the government in the case of currency notes and coins.”*

Therefore, it is very clear that United States is gaining huge unfair benefits from their dollars (one of the vehicle currency) in terms of seigniorage. Likewise, under fractional reserve banking system, commercial banks create money out of thin air and get the same seigniorage benefits.

In addition, Ellen Hodgson Brown quoted from Rodney Shakespeare from book *The Modern Universal Paradigm* (2007), predicted that significant monetary reform may come first in the Islamic community. Islamic reformers are keenly aware of the limitations of the current Western system and are actively seeking change, and oil-rich Islamic countries may have the clout to pull it off. Besides, interest-free banking system might work. Ellen Brown found in Sweden and Denmark, interest free savings and loan associations have been operating successfully for decades. These banks are cooperatively owned and are not designed to return a profit to their owners. They merely provide a service, facilitating borrowing and lending among their members. Costs are covered by service charges and fees.

Interest-free lending would be particularly practicable if it were done by banks owned by a government with the power to create money, since credit could be extended without the need to make a profit or the risk of bankruptcy from bad loans. A truly national bank would not need to worry about going bankrupt, in fact the feature of gold is liability-proof and it would not need an FDIC to insure its deposits. It could issue loans partially to anyone who satisfied its requirements, in the same way that the government issue driver's licenses to anyone who qualifies now. A system of truly “national” banks would return to the people their most



valuable asset, the right to create their own money. We would not need to pay income taxes, and we might not need to pay taxes at all.

Ellen also added a community or government banking service providing interest-free credit would just be a credit clearing agency, an intermediary that will allow people to “monetize” their own promises to repay. People would become sovereign issuers of their own money, not just collectively but individually, with each person determining for himself how much “money” he wanted to create by drawing it from the online service where credit transactions were recorded.

Furthermore, interest charges are incorporated into every stage of producing a product, from pulling raw materials out of the earth to putting the goods on store shelves. These cumulative charges have been estimated to compose about half the cost of everything we buy. That means if interest charges were eliminated, price might be slashed in half. She also admits that gold and silver are excellent ways to store value.

### **Gold Standard Argument**

Moreover, paper money is not a natural commodity. It is manmade. Therefore, ought to be able to control it. Referring to Judy Shelton (1994) in *Money Meltdown*, has identified currency chaos as an ominous threat and she issues a clarion call for a new stable international monetary order to serve the need of an open global economy and embraces the sanctity of sound and honest money as the only logical premise under which free trade and democratic capitalism can succeed around the world. According to Shelton a gold standard is not perfect but the least imperfect system because it depends on steady increases in real economic growth. But given the advantages of other systems – the corruptness of floating rates, the superficiality of pegged exchange rates, and the confusion of competitive private currencies – an international gold standard emerges as the most attractive option.

Certainly, it provides the strongest mechanism for guarding against tinkering by self-serving governments. Trading currencies is seen as some kind of specialist activity better left to the expert who operate on behalf of huge mutual funds and international banks whereas a gold standard offers a straightforward monetary rule that requires no

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expertise or arcane knowledge to understand. Money should be defined in precise terms so that it is worth something. She also stressed going on a gold standard constitutes the ultimate manifestation of central bank independence that removed from internal politics and managerial error. In terms of federal budget deficit, under a gold standard, the government would be put under extreme pressure to balance the budget.

If government expenditures exceeded government revenues, the difference would have to be financed the government would have to borrow to cover the shortfall. When the government borrows, it does so by creating debt instruments that provide purchasing power to their holder. People pay money to the government in exchange for the debt instruments and the government spends the money it receives, at the same time, it issues additional money claims that can be sold for funds today or redeemed in the future. Out of nothing more than a gap in the budget, the government creates purchasing power by obligating itself to pay back money in the future. This process is known as “monetizing” the debts.

What a gold standard can do is restore people’s faith in the merit of saving money. That is, it can resurrect the idea that saving is a virtue as opposed to being naïve, ill considered, and stupid. Apart from that, price distortions as associated with inflation or deflation are largely avoided under a gold standard. Business may be good or bad, profits may be high or low. But when the currency is backed by gold, like cryptocurrency back by gold, individuals do not have to tally their performance against a moving monetary target. Besides, a gold standard would be particularly helpful for developing countries that desire to participate in global market on the basis of their legitimate capacity to compete, rather than through succeeding rounds of debilitating currency devaluations.

Another benefit of gold standard is it would establish objective criteria for participating in international trade and finance. It will not distinguish between well-established industrial powers and poorer developing nations. Furthermore, it would protect nations from the foibles of their own finance ministers. It would assure private citizens that their purchasing power for domestically-produced goods as well as imports could not be manhandled by ambitious government officials all

too eager to correct for “market imbalances” that were likely the result of their own misguided economic policies.

A global gold standard also would provide monetary stability across borders and through time as well as carry out consistent monetary unit. A gold standard guarantees the constant value of money so that people can focus on the merits of economic and financial opportunities without being distracted by the risk of unanticipated changes in future purchasing power caused by inflation or deflation or fluctuations in the relative prices of national currencies. Moreover, a gold standard would close governments’ option to practice protectionism against trading partners through the deliberate devaluation of their domestic currency.

But if the global monetary order were determined in accordance with a classical international gold standard, no country, not even the most powerful, could dictate exchange rates by prevailing on its allies to manipulate foreign exchange markets. No Group of Seven inner circle of central banks could conspire to buy and sell each other’s currencies to change the natural course of trade flows.

Another benefit of gold standard is it would be the means to achieve the monetary system that would best serve the requirements of the global economy simply because it would provide common money with permanent integrity beyond the realm of governmental tampering. A classical gold standard ensures that government officials remain true to the economic interests of their own citizens.

According to article *The Global impact of the Gold Dinar* (2003) written by Philip Judge, in year 1997, the East Asian and numerous other financial crises worldwide made apparent the vulnerability of the current monetary system and the need for a more stable and just global monetary system. In fact, since the collapse of Bretton Woods in 1971, the world monetary system has been inflationary and volatile with the absence of a stable unit of account. Gold in net settlement is seen as strategic move to protect the interest of nations as far as monetary stability, independence and justice are concerned.

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**Call for A New Stable International Monetary Order**

In the book *Gold the Once and Future Money* written by Nathan Lewis published in 2007, he verifies that it is not necessary for the government to hold gold even under a system of redeemability. The monetary authority can always buy or borrow gold on the open market. Speculators regularly buy and sell gold that they do not own. If the value of banknotes is out of line with gold, then gold and banknotes will simply cycle around and around until the problem is corrected.

Besides, under a gold standard, the gold market is an open market free of government manipulation. The managing body does not intervene in the gold market to support or suppress prices. It used to be said that a devaluing government “changed the price of gold” but actually it was the value of the currency they were changing. The expansion and contraction of the supply of currency alters that currency’s value in relation to gold, but has no effect on gold itself. Gold is the thermostat of the system. When the gold market says there’s too much money, money is eliminated. When the gold market says there’s too little money, money is created. Just as a thermostat guides the heating and cooling of a house, it does no good to deal with the problem of a hot or cold house by jiggering the thermostat. All too often today, a gold standard is misunderstood as a system by which the gold market itself is manipulated, by buying or selling large amount of gold in sterilized intervention (i.e., without a corresponding change in the supply of money) to create a short-term aberration in the market. This is totally ineffective.

Without a change in the supply of money relative to demand, the gold/currency market will quickly return to an equilibrium point reflecting the discrepancy. If the central bank persists in buying or selling gold without adjusting its supply of currency, it will simply run out of gold reserves. This stupidity on the part of the certain central banks is not the fault of the gold standard.

The gold or dollar market accumulates all the existing information about monetary conditions into one price, in a fashion similar to the manner in which a company’s stock, if it is traded widely enough, will reflect all the information available about the company. Like all market

prices, the price of gold is one way the extended order transmits information. The gold market thus does away with the statisticians and bureaucrats in the same way that the stock market or the commodities market takes the place of Soviet system's central planners. The gold market, although it is commodity market is most similar to the foreign exchange market. It shows the market relation of a currency, not to another governments' currency, but to the supernatural currency of such, the gold market reacts more quickly to monetary changes than any other commodity.

Moreover, according to Lewis (2007) the gold standard reinforces democracy; paper money erodes it. Without the gold standard, the trillions of monetary agreements of the citizenry are made subject to the whims of secretive, unelected, politically insulated policy board. The evolution of money has been toward a system that is not subject to political decision making. The bimetallic gold and silver standard had to be abandoned in the late nineteenth century because the questions of profit and loss, success and failure, solvency and bankruptcy were subject to a political decision of whether of payment was allowed in gold or silver.

If government aims to break its promise with the people, it does not matter if gold has been piled to rafters in Midas's treasury. Nathan Lewis also affirmed in his book that one government has returned to the gold standard so many times over the course of history is that it is simply cheaper to do so. Because a gold standard lends monetary stability, which in turn allows economic stability, interest rates can fall to very low levels and stay there indefinitely. Interest rate that was common under the gold standard is impossible in today's environment of monetary chaos. Amsterdam had rates of around 3.5 percent during its heyday in the seventeenth century. (Nathan Lewis, p.111).

The strength of gold standard is the strength of the government's promise to uphold the integrity of the monetary system, not a commitment to dig gold out of ground and then bury it again in government vaults. If the promise is good, very little gold is needed. If the promise is broken, no amount of gold can put it back together. Gold is an element; it comes only in one form, and does not chemically combine with other elements. It does not tarnish or rust. It is highly malleable and

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can be pounded with hand tools into thin foils and then back into lumps. It is easy to melt, and it can be subdivided indefinitely. Because of its extraordinary density, it cannot be counterfeited, for all other metals (except for platinum, which is more valuable) are less dense and thus easily discovered (Nathan Lewis, p.117).

Unlike a cowrie shell, it cannot be crushed or broken. It is throughout the world and is present even in seawater. As a result, gold is hardly consumed, used up, or thrown away. The demand for non-monetary uses is trivial. There is no competition between monetary and industrial uses of gold. Unlike other commodities the gold futures market is never backwardated, meaning that its future value is never less than its present value. In other words, the interest rate on gold lending is always positive. Gold futures trade like currency futures. Gold is money. Gold does not have magical intrinsic value. Gold is used because it has served well through the centuries as a monetary commodity and measure of value, just as steel has been used to make machinery and copper has served to conduct electricity. That is why human continue to go great effort to dig gold out of the ground. Many people have used commodities prices indexes to get an idea if the long-term stability of gold and Roy Jastram's *The Golden Constant* is a fine example of this sort of effort.

However, there is no reason to assume that commodities index is better measure of value than gold. Gold has been chosen as the monetary Polaris because it is not subject to the kinds of market factors that affect other commodities, and long-term indexes are often heavily weighted with one commodity or another. There is no higher authority by which one can determine whether price change due to what Ludwig von Mises called "goods-induced" factor or "cash-induced" factors. The gold standard is not intended to produce stable prices according to one definition or another, but rather, stable money. Gold is the world citizenry's standard of value, and as Von Mises predicted, no government action can undo that fact, and just governments were not responsible for its creation.

Yet it can be observed today that when a currency declines in value compared to gold, inflationary phenomena appear. This is true of whatever currency is measured against the golden benchmark. Gold has

been adopted as money because it works. It has defeated every challenger. Though it has been spurned by governments many times, this has never been due to a fault of gold to serve its duty as a standard of value, but because governments had other plans for their currencies beyond maintaining their stability.

Another noteworthy contribution is an historical study of the gold standard by Professor Roy W. Jastram (1977). He wrote to *Wall Street Journal*: p.32:

*“From 1972 into the 1930’s Britain was on a gold standard and the United States was on either a bimetallic standard or one of gold alone. During all those years, in both countries, price inflations and subsequent deflations average sensibly to zero. The result: for both the U.K and the U.S the wholesale price index numbers at the end of gold standard were at just the level 1800.”*

Jastram (1977) goes on to suggest that this is “not unpredictable because the gold standard discipline was at work”. Thus, he concludes that “With the money supply showing ominous signs of being out of control, serious thought must be given to a new form of monetary discipline, one which might be suggested by age-old experience.” The case for as free market commodity money such as gold was trenchantly and succinctly stated by Ludwig von Mises in his book *On the Manipulation of Money and Credit* nearly sixty years ago, p.22:

*“The reason for using commodity money is precisely to prevent political influence from affecting directly the value of the monetary unit. Gold is the standard money primarily because an increase or decrease in the available quantity is independent of the orders issued by political authorities. The distinctive feature of the gold standard is that it makes changes in the quantity of money dependent on the profitability of gold production.”*

Almost one-half century later, with the government-manipulated, pseudo-gold standard of the Bretton Woods system racked by

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inflationary spasms and on the verge of collapse, Von Mises eloquently stated his argument in *On Current Monetary Problems*, p.29-30:

*“The quantity of money is the decisive problem. The quality that makes gold fit for service as money is precisely the fact that the quantity of gold cannot be manipulated by the governments. The gold standard has one quality, one virtue. It is that the quantity of gold cannot be increased in the way that paper notes can be increased. The use of the gold standard consists in the fact that it makes supply of money depend on the profitability of mining gold, and thus checks large-scale inflationary ventures on the part of governments. Gold cannot be produced in a cheaper way by any governmental bureau, committee, institution, office, international agency, or so on. This is the only justification of the gold standard. One has tried again and again to find some method to substitute these qualities of gold in some other way. But all these methods have failed. The eminence of the gold standard is to be seen in the fact that the gold standard alone makes determination of the monetary unit’s purchasing power independent of the ambitions and activities of dictators, political parties, and pressure groups.”*

In short, the case for commodity money rests on the fact that it furnishes the only effective bulwark against inflation. The fundamental reason for preferring the 100 per cent gold standard to other gold-based proposals for monetary reform is that it is the only monetary systems which effect the complete separation of the government from the supply of money. Under this system, the money supply process is totally privatized: the mining, minting, certification, and storage of the money-commodity as well as the issuance of fully covered notes and deposits are carried out by private firms operating in a free market.

In thus removing all vestiges of the government monopoly over money, the pure commodity standard provides a practically inflation-proof-currency. This become clearer once it is realized that inflation occurs for no other reason than it benefits that group or institution in almost every case the national government which succeeds in arrogating to itself the legal monopoly over money creation. The virtue of the 100



per cent gold standard is precisely that it establishes a free market in the supply of money and brings about a complete abolition of the governmental monopoly in this most sensitive and vital area of the market economy.

Indeed, although he regards a pure commodity standard as ultimately undesirable because of its high resource cost, Milton Friedman is essentially in agreement with this point in *Should There Be an Independent Monetary Authority*, p.220-222. According to Friedman:

*“If money consisted wholly physical commodity, in principle there would be no need for control by government at all. If an automatic commodity standard were feasible, it would provide an excellent solution to the liberal dilemma of how to get a stable monetary framework without the danger of irresponsible exercise of monetary powers. A full commodity standard, for example, an honest-to-goodness gold standard in which 100 percent of the money consisted literally of gold, widely supported by a public imbued with the mythology of a gold standard and the belief that it is immoral and improper for government to interfere with its operation, would provide an effective control against government tinkering with the currency and against irresponsible monetary action. Under such a standard, any monetary powers of government would be very minor in scope.”*

People acquire money in exchange for the goods and services which they themselves produce with a view to re-exchanging it for more desired goods and services at some time in the future. The performance of this medium of exchange function does not necessitate the physical destruction of the money-commodity. This fact differentiates money from consumers' goods and producers' goods i.e. capital goods and natural resources, since the latter two are used up in performing their respective function. Keynes makes a statement in *The General Theory of Employment, Interest, and Money* p.132, that, “at periods when gold is available at suitable depths experience show that the real wealth of the world increases rapidly and when but little of it so available, our wealth suffers stagnation or decline.”

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Under a gold standard, the supply of money does not change arbitrarily but varies directly with monetary demand, resulting in tendency to long-run stability in the purchasing power of gold. Moreover, in the short term, large fluctuation in the supply of money is precluded by the natural scarcity and durability of gold. Of course, this not to argue that the gold standard would or even should insure perfect stability in the value of money. In fact, as he has argued above, such a goal is chimerical, and all attempts to achieve in the real world will only create widespread maladjustments and instability in the economy. The point to be made, however, is that the market, when left to its own devices has chosen and will choose a commodity money whose qualities render its purchasing power sufficiently stable over time to permit market participants to realize the tremendous benefits of indirect exchange and economic calculation which accrue in the form of a tremendously broadened scope for division of labour and specialization and for capital accumulation.

The defining characteristic of such a monetary system has been incisively identified by Milton Friedman (1976. p.34) in article *Has Gold Lost Its Monetary Role?*. In his words, "A real, honest-to-God gold standard, would be one in which gold was literally money, and money literally gold, under which transactions would literally be made in terms either of the yellow metal itself, or of pieces of paper that were 100 per cent warehouse certificates for gold." While it is true that certain types of government intervention in the monetary system are consistent with the basic criterion of a genuine gold standard, it is equally true that no particular government policy is essential to the operation of this monetary standard. Indeed, as Friedman notes in *Journal of Money, Credit and Banking* titled *Monetary Policy: Theory and Practice* page 99, "If domestic money consists of a commodity, a pure gold standard or cowrie bead standard, the principles of monetary policy are very simple. There aren't any. The commodity money takes care of itself.

Economist Alan Reynolds, a staunch supporter of a monetary policy based on gold price rule argues in *Testimony before the United States Gold Policy Commission* page 15, "The purpose of the gold standard is to improve the efficiency and predictability of monetary policy by providing a flexible signal and mechanism for balancing the supply of money with the demand for money at stable prices. Two other

prominent supporters of a gold price rule, Arthur Laffer and Charles Kadlec state in *The Point of Linking the Dollar to Gold* p.32, that “The purpose of a gold standard is not to turn every dollar bill into a warehouse receipt for an equivalent amount of gold, but to provide the central bank with an operating rule that will facilitate the maintenance of a stable price level.” What is of overriding significance in the foregoing passages is the explicit or implicit characterization of the gold standard as a mechanism deliberately designed to implement specified policy goals, such a stable price level, that are aimed at by the government money managers.

For it is the underlying conception of the nature and role of money that is implied in this portrayal of the gold standard that ultimately and irreparably divides the modern from the traditional advocates of a gold-based monetary regime. The widely accepted goals that a successful monetary policy is supposed to achieve include: a stable value of the monetary unit or more accurately, constancy of some selected price index e.g; the CPI, the GNP deflator, or an index of spot commodity prices; the mitigation of cyclical fluctuations via the stabilization of various statistical aggregates and averages, such as the unemployment rate, the GNP index, the index of industrial production and others; the maintenance of a high rate of secular growth in real output, once more as gauged by the behaviour of selected statistical indicators and stability of real interest rates. As Lehrman explains in *Should We (and Could We) Return to the Gold Standard?*:

*“Under the gold standard there is no price for gold. The dollar is the monetary standard, set by law equal to a weight of gold. The price of gold does not exist. Under the gold standard, the paper dollar is a promissory note. It is a real claim to a real article of wealth defined by law as the standard.”*

In Lehrman’s proposal, Federal Reserve’s notes as well as dollar-denominated demand deposits at commercial banks and other depository institutions would once more become warehouse receipts for gold, instantly redeemable for gold dollars at face value upon the demand of the bearer or depositor. Ludwig von Mises the Austrian Economist wrote in the *Theory of Money and Credit*, p.420:

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*“The gold standard did not collapse. Government abolished it in order to pave the way for inflation. The whole grim apparatus of oppression and coercion policemen, custom guards, penal courts, prisons, in some countries even executioners had to be put into action in order to destroy the gold standard. Solemn pledges were broken, retroactive laws were promulgated; provisions of constitutions and bills of right were openly defied.”*

Von Mises proceeds to demolish the deeply entrenched myth, which Lehrman appears to accept, that likens the gold standard to a political “game” wherein the government players must adhere to some vaguely specified “rules of the game”.

Clearly, when considering monetary systems, stability is an important issue, but equally important, and one that is often overlooked, is the issue of justice. In many people’s mind, an international payment system based on gold addresses both these issues. Furthermore, since the last one hundred years has been major western economies steadily dismantle the classic gold standard internationally, and replace it with flexible debt-based paper monetary system. We only have to look around to see that this system has had far-reaching and destructive implications globally, on many levels. The vast majority of the population in the east understands that gold and silver are the only real money while paper is just promise to pay. Many are aware that the west has been able to simply print paper money and send it around the world to pay for its unquenchable consumer appetite for goods and services. Islamic Nations have experienced and witnessed the first hand currency crisis as result of the international US dollar policy.

There is no doubt that this kind of work puts behind it a century of suffering and defeat for the Muslims and opens the coming age to a powerful and revived Islam. We need more in-depth study to find ways or mechanisms of how to implement a cryptocurrency backed by gold. Thus, this study is trying to find out the answer and fill up that gap by proposing cryptocurrency back by gold for blockchain net settlement to enhance financial stability.

### Central Banks in Digitalized and Decentralized Economy

Central Bank have gone through multiple reincarnations, the last one was a big shift from the gold standard to a floating-rate system of fiat currencies. Because digital currencies challenges the role of central banks in an economy, researcher might expect central bankers to oppose blockchain technology. However, that not so the case because this technology represents a powerful new tool for improving financial services and enhancing the performance of central banks in global economy. Ben Bernake, former chair of the Fed, said in 2013 that blockchain technology could promote faster, more secure and more efficient payment system. Today both the Fed (Federal Reserve) and the Bank of England have teams dedicated to this technology. Not surprisingly, central bankers have been forward thinking in understanding the importance of blockchain technology to their respective economies<sup>18</sup> (Don & Alex Tapscott,2018). Hopefully, other central banks who have not been as vocal would follow soon.

Below is the role of central bank: -

- 1) They manage monetary policy by setting interest rates and controlling the money supply and in exceptional circumstances by injecting capital directly into the system.
- 2) They attempt to maintain stability. This means they act as a banker for government and for the banks in the financial system like the lender of last resort.
- 3) Central bank often shares the responsibility with other government entities of regulating and monitoring the financial system, particularly the activities of the banks that deal with savings and loans to average consumers.

So, what will we use as a means of payment and store of value in the future? Would it be cryptocurrency? Much lies in the hands of central bankers, regulators, policy makers, and monetarist remains to be seen.

Policymakers will not be able to remain bystanders. Central banks in particular could play a key role in shaping this future. Importantly,

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<sup>18</sup> Don & Alex Tapscott.(2018). *Blockchain Revolution*. Penguin Random House UK.

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central banks also settle payments between banks. Otherwise, interbank payments would be expensive, slow, and potentially contentious. Indeed, short of exchanging cash or gold, banks have to extend credit to each other in order to settle payments between themselves and their customers. This is where the central bank comes in. All banks hold accounts at the central bank, and a payment from one to the other is settled by transferring perfectly safe funds (called central bank reserves) from one account to another. Not only does this remove credit risk from inter-bank transactions, it also ensures that payments are interoperable across banks. As a result, no single bank however large its network, has an advantage in allowing payments among more customers. Interoperability is essential to level the playing field between banks.

Researcher would like to highlight important point here, that Blockchain trading platforms and financial decentralized applications do not work to eliminate centralized banks. Instead, they force banks to adopt distributed ledger technology. These decentralized alternatives to financial service require banks to use blockchain to facilitate faster cross-border payments, lower fees, and automate clearing and settlements. Blockchain applications in financial services push established financial services companies to operate on peer-to-peer networks for trustless, affordable, and faster services.

### **Blockchain and Sustainability**

Implementing sustainable living is all about meeting the needs of the present without compromising the ability of future generations and their needs. Implementing such sustainable living is quite challenging and at the same time hard to accomplish. Comprehending our own needs and responsibilities is not that easy, in that case anticipating the need of future generation is beyond imagination. However, establishing a sustainable life is the success mantra of longer safe live.

Our aim should be on a better livelihood for everyone, for this, we should consider the natural ecosystem and also consider the human system and integrate them together in such a way that it keeps its balance. Unfortunately, our current lifestyle is going the other way around rather keeping the balance between natural resource and human system, they are into acquiring all the resources themselves to lead a life

of luxury. Where one side, people find hard to meet the ends, there the other side people are luxuriously using the resources. We can see our nature diversity getting depleted and nature being destroyed at an unprecedented speed. Today, we are facing a large sustainable problem like drastic climate change and echo biodiversity extinction, and coming to humans, there are rising witnesses of poverty in many areas.

Many NGOs are now getting part of this great challenge and UN has revealed around 17 Sustainable Development Goals (SDG) to meet the global economy, political and climatic challenges that are faced by the entire world today. Today SDG covers global issues like global warming, healthcare, medical facility, eco and biodiversity, poverty, social justice, financial aid situation and many more. After considering many phenomena SDG found out that the latest upcoming technological advance can mix up with the current situation and can bring some changes in the near future. For this change, the great technology breakthrough blockchain and its application can be implemented because blockchain can help in moving forward towards the achievement of a sustainable and green future.

The current aspect of blockchain made many of the NGOs who participate in SDGs evaluating blockchain as one the greatest threat towards sustainability. The main reason for this is Bitcoin mining. Mining is considered a complex task and it requires huge and immense energy than what it has been thought. A recent study found out that its energy consumption rate is so high that the entire energy required to power Argentina in the year 2018. And by the year 2020, it would take energy need to power the entire United States in half-year.

But the fact is on the other side. Bitcoin is just a picture in the frame of blockchain. Blockchain which works on the basis of shared ledger technology can bring much better change in the sustainable challenge what we are facing now. Blockchain is capable of giving more transparency in collective and individual action, and also helps to reduce the accountability loop and can implement it in global aspect, avoid a great central authority, bureaucracy intervene and can stop difficulties in global border supply chain tracking.

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Why this is difficult when considering our global scenario, because major financial sector is handled by a central authority and that we call banks who control and monitor this huge wealth that has been delivered. According to SDG, it finds out that more than 5 trillion USD is allocated to face global sustainability. But less than 10 percent is used, because of the unstable system. Currently, it is very hard for tracking sustainable behaviors of the company, individual and also it is very difficult to reward them in a correct and speedy way. Most of the current institutions are resistant to change.

Major breakthrough that blockchain bring today is great development in the financial sector. This can be by means of full speed, high efficiency, and trust build transaction. The world needs a global platform to face this unstable economy and future. Blockchain is capable of building this. More than 1800 major cryptocurrencies are available and most world orders are accepting the current change by adopting blockchain and cryptocurrency. DLT (Digital Ledger Technology) bring a bookkeeping method and build a great trustworthiness in a global transaction.

Major investors around the globe are facing huge difficulties to know their huge investment is reaching towards a green echo investment, however, this can be achieved through blockchain technology. Keeping good track of each moment (transaction) with the help of automated smart contract can help investors in ascertaining their resource isn't getting wasted. Many Daap is already out there for investors to invest in a sustainable global invest. Sustainable invest wallet that has been built on the blockchain platform is a global solution for investors.

Besides that, blockchain is capable of providing global transparency and accountable immutable shared ledger in encrypted copies across all the nodes which participate in the network. This can bring trustworthiness among the trustless parties, mainly individual or companies whoever involved in the transaction. If the global supply chain is on the right track, one can reduce a great extent of fraud, pollution and human rights abuses. Transparency in the accountability, price, document handling and inference of government authority can be



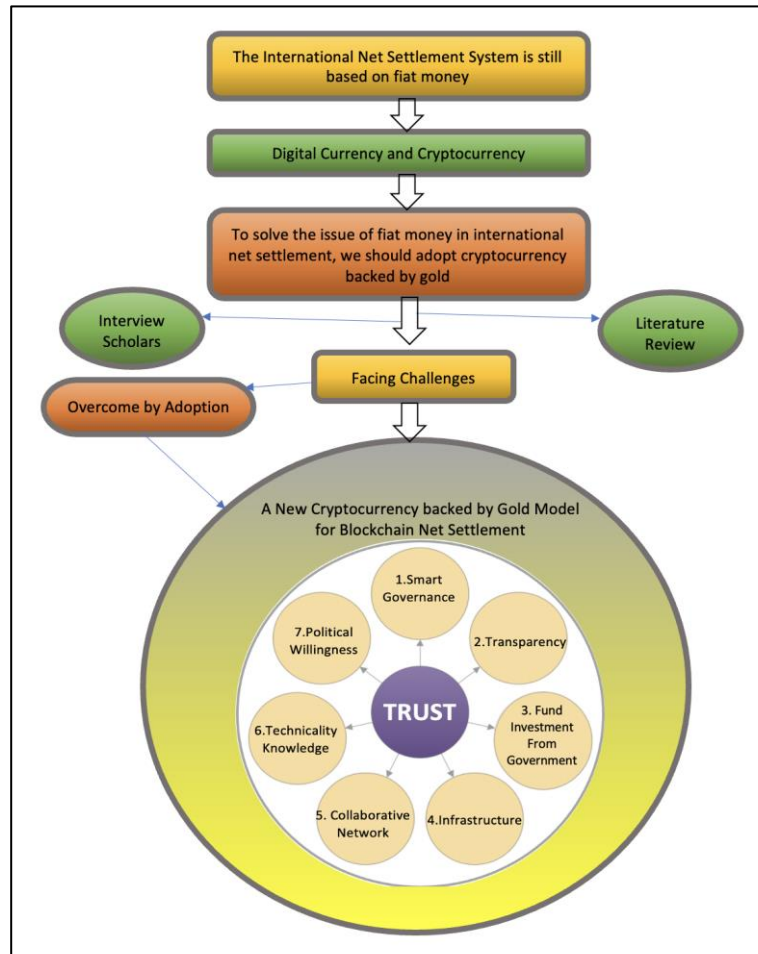
reached to the end-users through the shared ledger. And it will make easy for the parties to monitor the transaction correctly.

In today's system, it will take more time and cost to clear a government-related document and its verification process and also from the bureaucracy part. Cost reduction of bureaucracy through more efficient e-government blockchain tools can save a lot of money and time. Access to basic banking is still just a dream for more than 3 billion people still. But with peer to peer transaction on trusty network can eliminate the third-party intervention.

A major art of blockchain is in introduction of token. Blockchain introduces certain rules for the peer to participate in the network and the actors agree on a specific goal, for example, getting a token that is built on certain blockchain as a reward for correctly executing certain tasks. Correct reward evaluation is happened in the network. Reward can be of any time for example for proving the certain work (in market bitcoin is a reward as a proof of work to maintain correct transaction of records). Here in the sustainable case, we can consider proof of maintaining is a good recycle or planting trees.

Conceptual Framework

Figure 1: Propose Framework of Cryptocurrency Backed by Gold Model for International Net Settlement via Blockchain



The study chooses this approach in order to develop a framework of gold-backed cryptocurrency for international net settlement through blockchain technology. Moreover, it is important to understand the reason of finding alternative payment method that will impact to the implementation of cryptocurrency backed by gold. The propose framework can be seen as above at Figure 1.

In the current digital era of the 21st century, the prevailing international net settlement system relies on fiat currency, yet the evolution of money into digital and cryptocurrency forms presents a transformative opportunity. To address the limitations of fiat currency in international net settlement, this study advocates for the adoption of gold-backed cryptocurrency. Through comprehensive literature review and expert interviews, the researcher has navigated the scholarly landscape to propose a solution. Anticipating regulatory challenges and the need for political alignment, the forthcoming section will delve into meticulous analysis and discoveries. Envisioned as a remedy, the gold-backed cryptocurrency model for blockchain international net settlement holds the potential to mitigate inflation, stabilize currency valuation, and reinforce financial sustainability with resolute effectiveness.

Referring to the figure 1, Trust should be the basis of any framework involving a gold-backed cryptocurrency for blockchain international net settlement model. It plays a crucial role in ensuring the sustainability, credibility, and long-term viability of such a system. There is confidence in value preservation because gold has been recognized as a store of value for centuries due to its scarcity, durability, and universal acceptance. By backing a cryptocurrency with gold, trust is established in the preservation of value. Investors and participants can have confidence that their holdings are backed by a tangible asset with intrinsic worth. This trust in value preservation is essential for attracting and retaining users in the blockchain trade settlement model. Moreover, Trust serves as the requirement for a gold-backed cryptocurrency for blockchain trade settlement model. It ensures confidence in the preservation of value, mitigates volatility, fosters transparency and auditing, supports regulatory compliance, and leverages institutional partnerships. By emphasizing trust as the main component, the framework establishes a solid foundation for the widespread adoption and success of a gold-backed cryptocurrency in facilitating secure and reliable trade settlement on the blockchain.

In the framework of a gold-backed cryptocurrency for blockchain international net settlement, the functions of smart governance, transparency, government fund investment, infrastructure, collaborative network, technical knowledge, and political willingness are

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important to ensuring the success and effectiveness of the system while aligning with shariah-embedded, value-based investment, and environmental societal governance principles. The researcher would like to explain each of these functions in detail:

1. *Smart Governance*: Smart governance refers to the implementation of advanced technologies, such as blockchain, to enhance the efficiency, security, and transparency of governance processes. In the context of a gold-backed cryptocurrency for blockchain net settlement, smart governance ensures the proper regulation, oversight, and monitoring of the system. It involves establishing rules, protocols, and smart contracts that govern the issuance, circulation, and redemption of the cryptocurrency. By leveraging smart governance, the system can promote fairness, accountability, and trust among participants.
2. *Transparency*: Transparency is a key principle in both shariah-embedded investment and environmental societal governance. In the context of a gold-backed cryptocurrency, transparency ensures that all transactions, including the exchange of the cryptocurrency for gold, are publicly recorded on the blockchain. This transparency helps prevent fraud, money laundering, and unethical practices. By making transaction details accessible to all participants, transparency enhances trust, accountability, and the overall integrity of the system.
3. *Government Fund Investment*: Government fund investment plays a significant role in supporting the establishment and development of a gold-backed cryptocurrency system. Governments can allocate funds to research, development, and infrastructure necessary for the implementation of the system. By providing financial resources, governments demonstrate their commitment to fostering technological advancements, economic stability, and sustainable development. Government fund investment can also contribute to ensuring the liquidity and stability of the gold-backed cryptocurrency, enhancing its attractiveness as a medium of exchange and store of value.
4. *Infrastructure*: Infrastructure refers to the underlying technological framework required for the operation of a gold-backed cryptocurrency system. This includes the blockchain

network, digital wallets, secure storage facilities for gold reserves, and reliable connectivity. Robust infrastructure is essential for ensuring the efficient and secure transfer, verification, and storage of cryptocurrency and gold assets. It enables seamless transactions and builds confidence among participants, facilitating the adoption and usage of the system.

5. *Collaborative Network*: A collaborative network involves the active participation and cooperation of various stakeholders, including governments, financial institutions, businesses, and individuals. In the context of a gold-backed cryptocurrency system, a collaborative network fosters partnerships and synergies among these stakeholders. Collaboration allows for the pooling of expertise, resources, and market access, ensuring the widespread adoption and acceptance of the cryptocurrency. It also enables collective decision-making, standardization of processes, and the establishment of regulatory frameworks that align with shariah-embedded investment and environmental societal governance principles.
6. *Technical Knowledge*: Technical knowledge refers to the expertise and understanding of blockchain technology, cryptocurrency, and gold-backed assets. A deep understanding of these technical aspects is crucial for designing, implementing, and managing the gold-backed cryptocurrency system. Technical knowledge enables the development of secure smart contracts, effective governance mechanisms, and robust cybersecurity measures. It also facilitates the integration of environmental societal governance considerations into the system, ensuring that it supports sustainable and responsible economic activities.
7. *Political Willingness*: Political willingness is essential for the successful implementation of a gold-backed cryptocurrency system. It requires governments and policymakers to recognize the potential benefits of such a system, including economic stability, financial inclusion, and sustainable development. Political willingness drives regulatory reforms, legal frameworks, and policy initiatives that support the integration of the system into existing financial systems. It also encourages international cooperation and collaboration to address regulatory challenges, promote cross-border

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transactions, and foster a global ecosystem for the gold-backed cryptocurrency.

In a nutshell, the functions of smart governance, transparency, government fund investment, infrastructure, collaborative network, technical knowledge, and political willingness are fundamental to the framework of a gold-backed cryptocurrency for blockchain net settlement. By incorporating these functions and aligning them with shariah-embedded, value-based investment, and environmental societal governance principles, we can ensure the efficiency, integrity, and sustainability of the system. This comprehensive approach promotes economic stability, ethical practices, transparency, and environmental responsibility, contributing to a more inclusive and sustainable financial ecosystem.

### **Results Overview and Discussion**

#### **Gold-Backed Cryptocurrency Model for Blockchain Net Settlement of Smart Governance**

During the interview, the experts were asked about their perception on the Gold-Backed Cryptocurrency Model whether it would affect economy, could provide economic sustainability and solution for financial crisis. Many of them highlight the significance of smart governance. Since the new payment model will deploy blockchain technology, it requires smart governance to double check the process flow. In other word, accountability of how it works in term of infrastructure, work force and technicality knowledge are their concerns. The following are the opinions of the experts derived from interviews:

*"It is revolution of internet and artificial intelligence. The government still working on that, is not easy to implement at the same time, at the same quality. Because it depends on internet, online, Wi-Fi. Therefore, 5G instead of 4G will make it ease, to make it more faster in term of coverage. Another obstacles is the cost of infrastructure. In order to adopt cryptocurrency, blockchain, 5G, it need the foundation and infrastructure are well prepared before implement it because not all the countries have this infrastructure and can afford it". (I 1)*

*“In term of safety and transparency it must be offered on blockchain. Then you need a high-tech encryption tools. You need to put it in smart contract language. Once you put on blockchain, that means you are going to encrypted to a smart contract. The smart contract is no longer a language, it will execute the transaction if the certain condition are match. So there are two types of blockchain. Type number one is for documentation purposes. This is simply like filing, just put it into file. Type number two is reliance on smart contract.”. (I 2)*

*“One of the strongest assurances that you have is when you are backed by gold, you can guarantee the value. You are not creating value out of nothing. One very strong assurance that you can give to the people. It has to be strong governance processes as well as government mechanism to provide comfort to the people, at large. With blockchain technology, it very safe, very rare to temper. We already have the mechanism. It just that we need to enforce it, need to integrate it with the cryptocurrency backed by gold so that it will work well”. (I 3)*

*“What we need is a credible party, basically a credible issuer for this kind of gold-backed cryptocurrency who can ensure the good governance. If we get this, then we can trust this token like gold-backed cryptocurrency or any name. If we can ensure like if we buy this gold-backed cryptocurrency, there is definitely gold-backed and I can transact with it freely and effectively between countries. What the cryptocurrency backed by gold can offer in this context is it offer better security in term of ensuring transparency and governance. Better governance framework in this digital currency, let put it in this way. So, the question cryptocurrency backed by gold can work or not, for me is like a question whether the digital gold can work or not, as an economist. That from macro-economic point of view That is the first condition. The second condition is efficiency”. (I 4)*

*“It is good to start talking about international net settlement in gold. I think it is a very good idea if we could implement it. Number one, is gold-backed cryptocurrency is not subject for speculation like fiat money. But here with gold-backed cryptocurrency, if you want to issue new unit, the gold must be there. To ensure that the gold are there, commensurate to the holding of the owners in Bursa’s structure, from syariah point of view, we impose need to have proper license trustee. Proper license trustee to check*

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*regularly that the gold is there commensurate to the holding of the people".*  
(15)

*"My answer would be, the affect for trade will be positive not negative. It can bring unity if gold-backed cryptocurrency uses as the medium of exchange adopted by international regulators. For example, like if the Bank for International Settlements (BIS), world bank and other international regulator approved and accepted the idea, yes it will lead to unity. Then, it should work under smart governance to check on clarity of the process flow. If it is cryptocurrency backed by Gold, the inflation will be minimized. The inflation happened because the current fiat money is not backed by Gold and silver. It happened all in 1961".* (16)

*"We can do that but of course there will be a specific blockchain that is working within the country. Every country will have their blockchain system, platform and central bank will issue their currency in the form of crypto token. Then later on whether you want to backed it with gold, it's a government decision if they see there is a requirement for that and there is benefit for that, they can do it. So again, if you want to implement it, it has to be implement it at global level like everybody is in the system. If some country are doing it and some country are not doing it, there will be a disparity. And there will be unjustified benefit for other countries".* (17)

*"In term of transparency in transaction, yes more transparency. You will have system that do more auditability, traceability because we are using blockchain, right. Since the current situation, too many different currencies are unstable and create a lot of issues. I believe the implementation of Gold-backed cryptocurrency will bring unity to all people over the world, economically. It will provide a stability, and blockchain will provide security, so stability plus security will be equal to safety. Since one of the maqasid is protecting the wealth, and blockchain techniques can protect and secure the information, our financial data better. To me, it is more stability, no popup, and less risky".* (18)

*"Government must ensure, who is able generate it. Usually, any technology it start at very energy consuming. As we move on, the technology would evolve and become nothing, not harming our ecosystem. Again, all these*



*has to be understood by having clear governance on who generate it. If it is government central bank with multilateral system, that might be a major issue of it. Giving to the complexity of this technology, it demand more clarity from the governance. Some people said, this is how it work". (I 9)*

The responses summary is tabulated in Table 1.

Table 1: Gold-Backed Cryptocurrency Model of Smart Governance

Expert Opinion	I 1	I 2	I 3	I 4	I 5	I 6	I 7	I 8	I 9	Total
a) Smart Governance	√	√	√	√	√	√	√	√	√	9/9
b) Clear Accountability	√	√	n.a	√	√	n.a	√	√	√	7/9
c) Technicality Knowledge	√	√	√	√	√	n.a	√	n.a	√	7/9
d) Infrastructure	√	√	n.a	√	√	n.a	√	n.a	√	6/9

One of the features provided by blockchain is smart contract. Smart Contracts would significantly reduce the risk of transaction failure. According to Informant 2; given that smart contracts can be supported by blockchains, a blockchain net settlement system would be less prone to transaction failure than a conventional system. In other words, a blockchain smart-contract platform that uses tokenized assets can function as a clearinghouse such as verifying, matching, guaranteeing, and recording transactions. Referring to Randy Priem (2020) in *Distributed Ledger Technology for Securities and Clearing Settlement: Benefits, Risks and Regulatory Implications* (p. 13-14):

*"A smart contract has the same features as a traditional contract. It is an agreement between two or more parties to do or not to do something, in exchange for something else. The difference is that a smart contract is defined by code, which executes under precisely predefined conditions without any human discretion. As these contracts will execute automatically, they are considered to be 'self-enforcing'".*

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This is supported by Shermin Voshmgir (2020), emphasizing that smart contract code contains rules which the parties agree to. The blockchain stores the parties' values and access rights in a transparent, shared ledger, which protects the assets from deletion, tampering, and revisions. When, and only when, the contracts are met, the code executes the trade autonomously. To put it briefly, each component of blockchain net settlement must fulfil its function in order for smart governance to succeed.

**Gold-Backed Cryptocurrency Model for Blockchain Net Settlement as an Alternative Mechanism**

The respondents were asked their opinion during the interview concerning Gold-Backed Cryptocurrency Model as the Alternative Mechanism. The respondents agreed that this model could be the alternative mechanism for net settlement. This is the strength of gold-backed cryptocurrency. However, concerning the absence of the political will, the respondents suggested the need to consider other factors such as genuity of the transaction, security and credible issuer or party to ensure good governance. The following views were obtained:

*"Of course, by using gold-backed cryptocurrency it can be an alternative to fiat money. What more with blockchain, it will affect the trade and net settlement positively. It is better than fiat money and better than the initial idea of gold dinar from my understanding. By having blockchain we can settle it between two countries without interference of U.S dollar. All can be done for net settlement". (I 1)*

*"If you want cryptocurrency backed by gold to be succeed, it must be flexible. Flexible in the sense that if the other party's option want to redeem cryptocurrency either in cash or in gold or to retained as cryptocurrency just as representation of gold. Only that, it could be attractive at international level for net settlement.". (I 2)*

*"If we can have a crypto backed by the real gold, it is a wonderful idea to me. Yes, it might be a long journey, but which is worth it to explore and come out with the mechanism because you are engaging in real economic activities. This the real trading. Perhaps, if you are paying with*

*cryptocurrency backed by gold, you are engaging in real value activity. Is not like fiat money which we are very much entrenched to it. The biggest challenge would be political side". (I 3)*

*"One of the counter arguments against using the gold because today we depend so much on the faster transfer, cross trading, and etc. And caring gold is not practical. That is why, probably the digital gold a token that is backed by gold could solve the problem. So, what the cryptocurrency backed by gold can offer in this context is it offer better security in term of ensuring transparency and governance. Better governance framework in this digital currency". (I 4)*

*"Because of the blockchain, you can slice it to the smaller grammage. So, we can try to do it at our best through Bursa Malaysia because it is highly regulated under Securities Commissions. What we are doing now is like bottom up approach. It's not an easy job. For me, is a matter whether they see the benefit or they see no benefit, is a matter whether they buying the idea or they are not buying the idea". (I 5)*

*"One of the important mechanisms of implementation of Gold-backed cryptocurrency is international acceptance. It has to be acceptable internationally. Yes, I believe that it is applicable and it will be expanded because it is asset backed. The asset is not like any normal asset. It is valuable asset and it has its intrinsic value compared to other type of cryptocurrency". (I 6)*

*"I tell you now most countries thinking to have gold standard. For example, Russia and China. Because now US dollar is very very vulnerable and many countries they want to have the alternative system. They do not want to depend on US dollar only. Now because of that gold is very viable solution at the moment. With gold basically, you can have a stable coin with lesser fluctuation. With this token you can do transaction at internationally because previously in those era, there are no blockchain, there are no cryptocurrency. But right now, you just transfer gold-backed cryptocurrency (token) internationally with full transparency, with full audit and traceability etc etc. So, yes it is facilitating a little bit.". (I 7)*

*"Gold-backed cryptocurrency need a robust financial system and global agreement to it. By getting international recognition and support, that*

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*idea can be pushed further. The implementation of the Gold-backed cryptocurrency through blockchain will affect the trading globally, in a positive manner". (I 8)*

*"I think now is the fortunate time for that. Yes, for gold is understandable, crystal clear. There is of course the reservation about the gold that it will create rigidity in the monetary system, because government have expansionary policy. At time of recession now, countries print money, they tolerate inflation because country want to get rid out of recession. When you use gold that flexibility to create or use expansionary monetary policy will be limited because will be limited by supply of gold. Because you work hard, you can dig gold, or you can switch it into tradable currency. Now, if we bring back to a system which is gold, fair, that is accessible to all other country called a cryptocurrency backed by gold. That is very good move, for me". (I 9)*

The responses summary is tabulated in Table 2.

Table 2: Gold-Backed Cryptocurrency Model as the Alternative Mechanism

<b>Experts Opinion</b>	<b>I 1</b>	<b>I 2</b>	<b>I 3</b>	<b>I 4</b>	<b>I 5</b>	<b>I 6</b>	<b>I 7</b>	<b>I 8</b>	<b>I 9</b>	<b>Total</b>
a) Solving financial difficulties	√	√	√	√	√	√	√	√	√	9/9
b) Wonderful idea	√	√	√	√	√	√	√	√	√	9/9
c) Economic wise	√	√	√	√	√	√	√	√	√	9/9
d) Need regulation attention	√	√	√	√	√	√	√	√	√	9/9

**Conclusion**

To conclude, blockchain is indeed a game-changer for international net settlement. From faster processing to easier reconciliation, greater transparency on transaction to fewer conversion fees, blockchain enables the businesses to breath freely and confidently. The blockchain underlying tokens and smart contracts generate a sense of certainty and transparency over the conduct, and totally evade the unwanted interventions of intermediaries like clearing houses and

correspondence banks. As modern society transitions to a global and digital economy, blockchain represents a key tool for third-world and developing economies for transition to digital in pace with established and first-world counterparts. This benefit is particularly impactful to areas currently dominated by fiat that are hindered by an inadequate or non-existent banking infrastructure.

This study provided an analysis of the semi-structured interviews involving the nine experts from various organisations. According to the information obtained by the researcher, it appears that the Gold-Backed Cryptocurrency Model could be alternative mechanism for blockchain net settlement. Nevertheless, it still needs to improve in some areas, particularly concerning smart governance, trust, infrastructure and technicality knowledge due to the model lacks of regulation. The current study conducted the first investigation on a Gold-Backed Cryptocurrency Model for the international net settlement as alternative mechanism for current practice. One of the interviewees made the following interesting statement, which the researcher would like to quote:

*"It is not the question effectiveness of technology. It's the question are we able to change, to go out of this the whole conventional fiat monetary system which have been built in favour of the country with power, the dominant. So, to go out of this, is not an easy".*  
(I 4)

Once the Prophet Muhammad's quote become apparent,

*"Allah never changes the condition of a people unless they strive to change themselves"*

- Surah Ar-Ra'd (13:11) -

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