

Cryptopia: A Future State

Kotonashi Masato

Abstract. The current world economic system is due for a collapse due to its inherent flaws. Such a system cannot hold.

We propose a solution to this problem through the creation of a society that uses Bitcoin's blockchain technology as its foundation. The society will begin as a city outside of the borders of any state or country and independent of the world economy. The result will be a fair and impartial economy as well as a transparent political system controlled by its citizens rather than a selected elite. Its objective is to serve as an example for other nations to emulate.

I. Introduction

The world is due for a wide-scale economic collapse brought about by the inherent weaknesses of the prevailing free-floating fiat currency regimes. These inherent weaknesses began with the abandonment of the gold standard, which countries had abided by from 1871 to 1914.

During this period, the world monetary system was backed by the value of gold, a system that provided several clear advantages:

Inflation-proof. The price of gold was generally stable due to its large supply (Mill, 1848). Governments could only issue new currency if their supply of gold also increased. Thus price inflation rarely occurred, and due to the limited supply of gold in the world, hyperinflation was impossible.

Safety and Security. As an element, it cannot be perfectly fabricated. Gold owners may also exchange their paper notes for physical gold if need be. Even in modern times, gold is seen as a hedge to protect against inflation or currency devaluation.

Durability. Gold does not spoil nor does it lose value in the long term. It has been used throughout history as a store of value.

On August 15, 1971, President Richard Nixon removed the U.S. dollar from the gold standard, paving the way for the international currency market to cut its connection to gold and move to fiat currency. From that point onward, the value of currency fluctuated depending on market forces and government decree. The money used by regular people fell into the hands of an elite cadre of corporate leaders, bankers, and politicians.

The fiat system is based on trust that a national government can and will protect the value of its currency. However, governments have instead proven that they can and will manipulate currency values to serve political or economic agendas. In 2011, currency manipulation among countries amounted to \$1 trillion alone, causing millions of lost jobs in Europe, the United States, and many developing countries. Currency manipulation also contributed to the 1929 Great Depression, with international currency wars pulling down an already weakened world economy (Bergsten and Gagnon, 2012).

The fiat currency is a 50-year experiment that is failing. A significant enough shock could cause hyperinflation in one nation's economy, then quickly spread to the entire world like a contagion. That this widespread economic collapse has not yet occurred is mainly due to luck and the immense incentive for most parties to keep the system in place, but for as long as these flaws remain unmitigated, the risks remain unchanged.

Unmitigated Climate Crisis

A shock may come in a number of different ways, but one threat stands above all: an economic collapse brought about by climate change.

A major issue of the 21st century, climate change affects all countries and economies regardless of economic standing. Greenhouse gases released by farms and the burning of fossil fuels traps heat from the sun, causing a rise in temperature on the planet's surface. The proof is well-documented and the effects are far-reaching.

A build-up of temperature causes polar ice caps to melt and triggers a rise in sea levels, which will threaten coastal cities and shrink habitable land (Powers, 2012). In addition, the oceans absorb this carbon and turn acidic, causing mass extinctions in marine life and threatening a natural food source for the world population.

The outcome of such shocks is a catastrophe that will far exceed the human misery created by the Great Depression, with every facet of the world economy being adversely affected.

Rising sea levels will bring untold amounts of destruction in coastal areas around the world. For instance, according to the U.S. National Assessment's coastal sector assessment, by the year 2100 the cumulative cost of an 18-inch (46-centimeter) sea-level rise to the U.S. will be between \$20 and \$200 billion, while a 3-foot (1-meter) rise produced will be twice that amount (Boesch et al., 2000). For a place like New York to face a rise in sea level of one meter higher, it would expect to face storm surges, normally seen once a century, every three years instead. (Rosenzweig and Solecki, 2001).

Asia, touted to be a region of high economic growth, faces dire consequences from a rise in sea levels. Around 80% of the populations at risk live in the Asia and Pacific regions. In East Asia alone, 12 million people across 23 cities and \$864 billion worth of assets are at risk due to severe flooding (Westphal et al., 2013).

Lesser arable land will lead to hunger. People will migrate away from coastal areas to inland cities and towns, which will lead to denser cities and rapid urban decay. Simultaneously, ocean acidification will lead to the loss of coral reefs, which are estimated to provide goods and services worth \$375 Billion (Costanza et al., 1997).

In all, findings show that by 2100, the global economy will worsen, with incomes averaging 23% lower due to climate change.

The climate crisis is exacerbated by various non-cooperating and non-transparent governments, with different priorities and morals. The aforementioned elite's lack of transparency and propensity to pursue their agenda contribute to climate change.

On February 16, 2005, the Kyoto Protocol was put into effect, with the goal of having industrialized economies lower their greenhouse gas emissions to meet individual targets. The agreement places a heavier burden on developed countries as it was recognized that they are responsible for a majority of greenhouse gasses in the atmosphere.

However, in 2011, Canada, Russia, and Japan announced that they would not take on further Kyoto commitments. Later that year, the Canadian government withdrew entirely from the Kyoto Protocol. Prime Minister Harper and his government declared oil sands development in Alberta a higher priority ("Canada pulls out of Kyoto protocol", 2011).

The United States signed the Kyoto Protocol but never ratified it, despite being a major producer of greenhouse gasses. Then-President Bush explicitly stated that he believed the agreement would hurt the U.S. economy (Borger, 2001).

It was clear that with the 2012 expiration of the commitments in the Kyoto Protocol, most signatory countries have failed to meet their agreed-upon targets, nor have any significant reductions in fossil fuel emissions been achieved. Emissions continue on an upward trend and are projected to worsen (Helm, 2012).

While it is still possible that governments would forge agreements aimed at reducing fossil fuel emissions in the future, such accords will fail to meet their own set targets without any enforcement mechanisms in place to ensure they adhere to these standards.

No matter how people wish it, no accord to alleviate climate change will be successful for as long as governments cannot be made to be transparent and accountable to their populace and to the rest of the world.

II. Proposed Solution

The problems we described may not be solved by a simple policy change or another climate accord. A drastic measure must be undertaken to resolve these risks before they become untenable. In short, a reboot of society is required, one that is based on an emerging system that creates a secure, transparent, and trustworthy basis for both governance and commerce.

Blockchain technology, the technology behind the cryptocurrency Bitcoin, will provide these benefits. Bitcoin has previously been proposed through a white paper as an alternative to fiat currency for online commerce. This same technology can be leveraged as a solution for this upcoming crisis.

Blockchains and cryptocurrencies provide advantages not accessible with the current fiat system:

Safe and Secure. Blockchain is secure by nature. All transactions are cryptographically hashed using public and private keys. Every user may choose whom to share their information using their private keys. All data written onto the blockchain becomes immutable. Attempts to change transactions by a malicious person are rejected by the other nodes. If a block is deemed invalid, nodes on the network will simply refuse to work with them.

Durable. For as long as the internet exists, cryptocurrency will continue to exist. It cannot be burned, lost, or counterfeited.

Transparent. A blockchain holds a public history of all transactions made on it. All records are fully auditable and can be validated by the network. Once validated, that data is indelible. Changing a transaction is impossible, as to alter one would mean altering all blocks on the chain as well.

Versatile. Apart from financial transactions, blockchain technology may be used in other forms of data transmission. As a digital ledger, it has a wide variety of applications, such as logistics monitoring, management of healthcare data, real estate processing, and voting.

Decentralized. As it is designed to operate on a peer-to-peer network, no single entity is in control of a blockchain. This decentralization of the system means less manipulation. Not completely eradicated, but by far reduced to a much smaller level of influence.

Simply offering blockchain and cryptocurrency technology will not be enough to facilitate the prescribed societal reboot. As with climate change, the elite of this world are capable of willfully ignoring science and technological advancement when these don't directly benefit them. Instead, the benefits of these technologies must be demonstrated in such a way as to leave no doubt that they are the only viable replacement for our current systems of commerce and governance and as such will be adopted by the public in general.

The proposed solution is a fully functional city-state that is based on blockchain technology and cryptocurrency. This will be a city-state that is independent of any foreign power and uses no fiat currency system. This city-state will be known as Cryptopia.

III. Vision (est. 3 pages)

As a semi-autonomous city-state, Cryptopia will serve a two-fold function:

1. Demonstrate that a society founded on blockchain technology is sustainable.
2. Provide a haven for humanity that will preserve the fabric of society, then facilitate a resurgence of growth.

Location

To achieve its objective of becoming an independent city-state, Cryptopia needs to be built on a location outside of any country. Given that every landmass in the world has been claimed by an existing nation, we propose that Cryptopia be constructed on international waters through *seasteading*.

The exact building location of Cryptopia will rely on the technology and international laws of the time of its construction. Given current laws, it may be advisable and realistic for Cryptopia to be located within the maritime borders of a host nation that can offer protection and logistical support while allowing Cryptopia to govern itself as a semi-autonomous state. As an option, one may purchase their citizenship, which provides them a passport and voting rights in Cryptopia.

A survey will be conducted to find an appropriate ocean location for a seastead. This will take into account factors such as climate, tidal forces, and energy resources. The city may be built on platforms floating on the ocean surface. The platforms would be anchored to the ocean floor to hold the city stable, with the habitable areas built above sea level. Alternatively, they may resemble oil drilling platforms built from reinforced concrete and held up by undersea pillars constructed on a stable ocean bed.

Regardless of the manner of construction, Cryptopia will be free to experiment with its own form of governance and systems for commerce, as well as affording greater freedom for its citizens to choose their way of life.

Commerce

Cryptopia will run entirely on a single designated cryptocurrency, to be determined by the citizens themselves. All individuals who settle in Cryptopia as citizens will be given an individual registration number. They may use a digital wallet of their choice. The wallet will perform the following functions:

- Store private keys
- Certify transactions
- Send transactions to nodes
- Read the blockchain

Given the decentralized nature of cryptocurrency, no central bank will be necessary for Cryptopia. The function of a bank in the city-state will be the maintenance of the cryptocurrency system and where necessary, auditing of citizens' wallets. It may also function as secure storage for non-cryptocurrency valuables and asset management. All agreements will be recorded on the blockchain, allowing for easy monitoring, less chance of deviation from agreements, and quicker resolution in the event of a dispute.

Cryptopia citizens, or Cryptopians, will have the freedom to purchase real estate, goods, and services throughout the city. They are likewise free to open businesses and trade with other citizens, own and lease residential and commercial space, and travel as they see fit. Biometric checksums will be used to serve as the ultimate proof of ownership.

Government

Cryptopia will feature a decentralized government largely controlled by its citizens. Policies are proposed by the citizen's elected officials and are put to a vote on whether they should be made into law. To encourage good behavior, a public reputation system may be put into place in the blockchain. Crimes and misdemeanors lower one's reputation score by an amount determined by the government. Those with high scores may take part in government profit-sharing, while those with low scores will be prohibited from certain activities, such as running for office. First priority would be a code of ethics that all individuals must adhere to in order to be a citizen.

Elected government officials will propose policies based on their constituents, or alternatively, any citizen that has gathered enough support through the blockchain for a policy may propose it. Once a proposal passes into law, the government will also implement and enforce it. In the case where the policy can't be enforced automatically on the blockchain, violators may be fined instead, paying their fine directly through the blockchain. Likewise, a court system will be established to settle disputes among citizens. A police force will also be established to curtail abusive and criminal behavior, and their names, offenses, and corresponding fines recorded in the public blockchain.

As blockchain already creates a digital ledger of secure, anonymized and auditable transactions, it may be used to record and audit votes. Once an individual has been certified as a Cryptopia citizen and issued a wallet, they will be registered as a voter and added to the voter blockchain. When the citizens are called upon to vote on a proposal, their registration is verified on the blockchain. Once verified, they may view the proposal on the blockchain. If the citizen chooses to vote, they vote using their credentials within the given time period and their vote is recorded in that particular proposal's blockchain. The government will track and audit the process and ratify the results.

Whether it be for a policy or a government official, citizens may change their vote at any time. They will be notified through their wallet when a vote is cast or changed and they may verify the vote at any time.

The state may suspend an individual's voting rights temporarily or indefinitely as a penalty for crimes and misdemeanors. Their restriction will be entered into the blockchain, preventing them from participating in the voting process during the verification process. This can be undone with a proposal that has gained sufficient public support.

With this, Cryptopia citizens are provided the ability to decide policies for themselves. All actions by themselves or their elected officials are traceable on the blockchain, incentivizing their honesty and integrity.

Energy

Given the tremendous amounts of energy needed to support Cryptopia's facilities, businesses, and blockchain technology, energy production will rank as one of the most important industries of the city-state.

Depending on the level of technology at the time of completion, the city may be powered by a combination of renewable energy sources, including solar, wind, tidal,

coal, and nuclear. The city will maintain a commensurate level of effort to maintain an adequate power supply at all times.

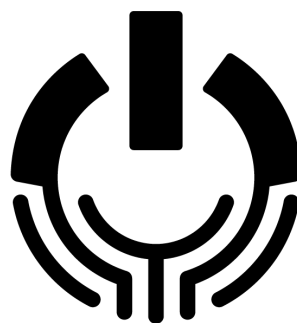
Simultaneously, in keeping with its mandate to create a sustainable society, Cryptopia must adhere to sustainable practices. Businesses in Cryptopia will use every opportunity to employ blockchain technology in streamlining their processes, thereby optimizing operations and preventing waste. Greenhouse gas emissions by corporations will be monitored and blockchain technology will be employed to maintain transparency, keeping companies honest as to their resource management and their carbon footprint. As their records can be made public, the citizens will be advised to make informed choices on which businesses to support in terms of environmental consciousness.

Carbon emission will be taxed to control its output, with the government calculating the exact tax that companies will have to pay. A company may purchase the rights to emit carbon, but these rights will be limited and the price of these rights may fluctuate depending on the policy. The taxation will be public on the blockchain, eliminating the possibility of discrimination against any company.

Identity

Cryptopia will fulfill the necessary requirements for a nation-state. It will define and maintain its borders, establish a decentralized government, maintain a permanent population, and establish relations with other nations.

We proposed that the symbol to be used for the flag is the computer on/off switch.



IV. Conclusion

Fiat currency regimes are a 50-year experiment that has failed due to their intrinsic weaknesses and to the propensity of the ruling elite to manipulate it according to their political agenda. A significant shock, such as one caused by climate change, will cause

massive economic collapse and human misery on an unprecedented scale. To mitigate this risk, we have proposed a solution by creating an independent nation-state, Cryptopia, that is founded on blockchain technology and cryptocurrency. Its two-fold purpose is, firstly, to demonstrate that such a society will prove to be a viable alternative to the current system of governance and commerce, and; secondly, to provide a haven for all nations to emulate and thereby preserve human society. Cryptopia will provide the reboot that society needs in order to survive and thrive.

V. References

1. Bergsten, C. Fred, and Joseph E. Gagnon. "Currency Manipulation, the US Economy, and the Global Economic Order." *PIIE*, December 2012, <https://www.piie.com/sites/default/files/publications/pb/pb12-25.pdf>.
2. Borger, Julian. "Bush Kills Global Warming Treaty." *The Guardian*, 29 March 2001, <https://www.theguardian.com/environment/2001/mar/29/globalwarming.usnews>.
3. "Canada pulls out of Kyoto protocol." *The Guardian*, 13 December 2011, <https://www.theguardian.com/environment/2011/dec/13/canada-pulls-out-kyoto-protocol>.
4. Costanza, Robert, et al. "The value of the world's ecosystem services and natural capital." *Nature*, vol. 387, 1997, pp. 253–260.
5. Helm, Dieter. "The Kyoto approach has failed." *Nature*, 28 November 2012, <https://www.nature.com/articles/491663a>.
6. Mill, John Stuart. *Principles of Political Economy*. 1848.
7. Powers, Ann. "Sea-Level Rise and Its Impact on Vulnerable States: Four Examples." *DigitalCommons@Pace*, Pace Law Faculty Publications, 2012, <https://core.ac.uk/download/pdf/46713839.pdf>.
8. Rosenzweig, C., and W. Solecki. *Climate change and a global city - The Potential Consequences of Climate Variability and Change*. vol. 1, Metro East Coast, 2001. 8 vols.
9. Westphal, Michael, et al. "Economics of Climate Change in East Asia." *ADB Publication*, 2013, <https://www.adb.org/publications/economics-climate-change-east-asia>.

VI. Appendix — Assumptions

1. Cryptopia will have access to a stable and consistent internet connection.
2. Cryptopia will have access to reliable energy resources.
3. There exists the engineering capability to build a seastead city on international waters.

