STABLECOIN ECONOMY

ULTIMATE GUIDE TO SECURE DIGITAL FINANCE

ALYZE SAM
WOMEN IN BLOCKCHAIN

KOOSHA AZIM ADAM ALONZI

Stablecoin Economy
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INVESTMENT RISKS

There are risks associated with investing in cryptocurrencies. Much like investing in stocks, bonds, exchange traded funds, mutual funds, and money market funds, digital assets may also involve risk of loss. Loss of principal is possible. Some high risk investments may use leverage, which will accentuate gains and losses. Foreign investing involves special risks, including: greater volatility, political, economic and currency risks, as well as, differences in accounting methods. Please spend time becoming educated by seeking multiple opinions and gain advice from a wide range of professionals before considering major investments.

This book is dedicated to the blockchain community.
Crypto's earliest enthusiasts are my greatest friends.
You all saved my life. Let's make a beautiful world, together.
Love, Sam

Introduction

Most agree high volatility prevents many from using traditional cryptocurrencies for daily transactions. It's not uncommon to see a 10 or 20% price fluctuation in a single day. It's difficult to budget if the means of barter is fluctuating faster than one can spend it. Can Stablecoins catalyze the mass adoption of decentralized banking?

Ideally a cryptocurrency provides price stability, scalability, and advanced privacy protection contained within a decentralized design. Educating the public will lead to wider adoption and less volatility over time. Until then, the idea of an asset-backed digital currency looks like a prudent intermediary between fiat and more decentralized cryptocurrencies. Properly implemented Stablecoins are intuitive, effortless to use from a smart device, easy integration points for partners, and allow for uncomplicated transactions. However, long-term stability is the goal of a successful Stablecoin. Short-term stability is important to encourage everyday use.

According to Finance Migates, "54 *Stablecoins now comprise 2.7 percent of the total market share of all cryptocurrencies, up from 1 percent in 2018; over $260 million in venture funding has been raised by Stablecoin projects as of February of this year. Eighty-three percent of existing Stablecoins are asset-backed, while the remaining 17 percent are algorithmic.*"

Financial institutions are looking for new technologies while crypto enthusiasts are striving for a wider adoption of digital currencies. Stablecoins may be a compromisable solution.

After reading this text, you'll be familiar with the two types of Stablecoins and be able to note current active and pre-sale Stablecoins. For clarity, I've further categorized Stablecoins into five descriptive types and included charts for comparing and contrasting.

This guide is meant to be an unbiased review of Stablecoins with opposing opinions from financial Thought Leaders. Our hope is this guide will give people the freedom to develop their own opinions so they can invest according to needs and desires. Thank you in advance for your kind feedback.

Chapter 1

History of Fiat
Barter, Shell Economy, Metal Money

Currency is a vast study, though understanding the history of money will open the door to a deeper appreciation of digital assets and commodity-backed digital currencies.

In today's financial system, fiat money does not have '*use value*'. *Use Value* or *value in use* is a concept from classical political economy that refers to the tangible features of a commodity, namely, the features that fulfill human needs. .

A simple definition describes fiat as a form of currency without intrinsic value that's been determined as money, or a commodity, often by government regulation.

Barter
This ecosystem began forming at the dawn of humanity, when trading or *bartering* was used in lieu of fiat for exchanging goods and services. Soon after man began breeding domestic livestock for survival, bartering also took place to lessen the load of individual work.

When bartering cattle, sheep, goats, vegetables and grains commenced, the 5,000 year journey from agricultural trade to digital assets also began.

Shell Economy
Barter served civilization until emerging societies had a need for more efficient means of exchange.

Globally, different cultures developed their own currencies, the earliest known example from 1,200 B.C.

Archeologists believe cowry shells were first used in China because their intricate designs made them difficult to forge. Interestingly enough, decorative shells have been found all over the world, this suggests cowry shells have been used as currency by many cultures throughout history.

Metal Money

A shell economy led to the use of *metal money* in around 1000 B.C. when the Chinese formed metal into small shapes resembling cowry shells.

In 500 B.C., *Rai Stones*, or large limestone discs measuring up to 2.6 meters in diameter and weighing up to 4 metric tons, were used in Micronesia as a form of currency.

The first form of currency that would be acceptable by today's standards was most likely minted by King Alyattes in Asia Minor, present-day Turkey.

In the 7th century B.C. the Lydian Electrum was issued as gold and silver alloyed coins featuring a roaring lion's head.

Since, gold and silver are almost universally acknowledged as currency in every civilized nation and precious metals are recognized as a commodity of real value in more primitive societies.

Minted coins, food, and other representations of money evolved into today's fiat when many cultures around the world developed the use of money whose value was based on the value of the material from which it was made. This type of money is known as "specie money" and its value is guaranteed or backed by the precious metal it contains. *(See Commodity-Collateralized Stablecoins in Chapter 6)*

It's interesting to observe, between 500 A.D. - 1600 A.D. salt, cheese, rice, tea and other consumable commodities were used as mediums of payment and exchange. This state of affairs did not discontinue until the 17th century.

Chapter 1

History of Fiat
Paper Currency and Banknotes

Paper Currency

During the Tang Dynasty, 618- 907 A.D., the Chinese were the first to use folding money. These notes were generally privately issued bills of credit or exchange notes. They were used for nearly 500 years before Western societies aligned their cultures with a paper based economic structure. Another two centuries passed before paper was globally accepted.

During that time, China underwent a fairly advanced financial crisis due to the overproduction of paper notes, destroying their value and fostering inflation.

Consequently, China eliminated paper money entirely in 1455 and wouldn't adopt it again for several hundred years. Numismatists, or scholars who study currency, believe this economy was a byproduct of block printing.

Adventurer Marco Polo was fascinated by paper money during his travels through China and shared his research after returning to Europe.

According to Marco Polo, one of the most constructive innovations throughout history was the implementation of paper currency as a substitute for other historical means of exchange.

From 1260, when Kublai Khan completed the conquest of China and took the title of emperor, the issue of paper money became a permanent feature of the Mongol government's financial policy. Records were preserved showing the yearly amount of notes issued through Kublai's reign and that of his successors for ninety-seventy years (1260-1356)."

Paper folding money was the first form of Chinese printing met by European travelers. The unique currency was independently discussed by at least eight pre-Renaissance European writers, and, so far as is known, is the only form of Chinese printing described in European writings of pre-Gutenberg days. Marco Polo's description has been the most detailed record discovered.

Paper money was introduced to the West by Marco Polo in a chapter of his *Travels* book entitled "How the Great Khan Causes the Bark of Trees, Made into Something Like Paper, to Pass for Money All Over His Country."

Marco Polo described the use of currency notes throughout Khubilai Khan's Yuan dynasty:

> "*With these pieces of paper, made as I have described, he [Khubilai Khan] causes all payments on his own account to be made; and he makes them to pass current universally over all his kingdoms and provinces and territories, and whithersoever his power and sovereignty extends. And nobody, however important he may think himself, dares to refuse them on pain of death. And indeed everybody takes them readily, for wheresoever a person may go throughout the Great Kaan's dominions he shall find these pieces of paper current, and shall be able to transact all sales and purchases of goods by means of them just as well as if they were coins of pure gold. And all the while they are so light that ten bezants' worth does not weigh one golden bezant.*
>
> "*Furthermore all merchants arriving from India or other countries, and bringing with them gold or silver or gems and pearls, are prohibited from selling to any one but the Emperor. He has twelve experts chosen for this business, men of shrewdness and experience in such affairs; these appraise the articles, and the Emperor then pays a liberal price for them in those pieces of paper. The merchants accept his price readily, for in the first place they would not get so good a one from anybody else, and secondly they are paid without any delay. And with this paper-money they can buy what they like anywhere over the Empire, whilst it is also vastly lighter to carry about on their journeys. And it is a truth that the merchants will several times in the year bring wares to the amount of 400,000 bezants, and the Grand Sire pays for all in that paper. So he buys such a quantity of those precious things every year that his treasure is endless, whilst all the time the money he pays away costs him nothing at all.*

Moreover, several times in the year proclamation is made through the city that anyone who may have gold or silver or gems or pearls, by taking them to the Mint shall get a handsome price for them. And the owners are glad to do this, because they would find no other purchaser to give so large a price. Thus the quantity they bring in is marvellous, though these who do not choose to do so may let it alone. Still, in this way, nearly all the valuables in the country come into the Kaan's possession"[1]

"*Now that you have heard the ways and means whereby the great Khan may have, and in fact has, more treasure than all the kings in the world; and you know all about it and the reason why.*"

Some claim Polo's extreme description of the Chinese minting money was both amusing and tragic but may have influenced the financial state of the world.

Banknotes

The Modern form of banking had its birth in medieval and early Renaissance Italy. One of the world's most famous banks from this period was the Giovanna Medici founded in 1397. The first European banknote was issued by the Bank of Stockholm in 1661.

After banknotes became convenient, Britain pegged its currency to gold to curb inflation. The Gold Standard was established in 1816, which encompassed a monetary system where a country's currency has a value directly linked to gold.

With the Gold Standard, countries agreed to convert paper money into a fixed amount of gold. America joined the Gold Standard in 1900.

Britain discontinued the Gold Standard in 1931, America followed in 1933. All remaining countries had abandoned the remnants of the Gold Standard ecosystem by 1973, The Gold Standard is not currently used by any government. Modern money systems are not typically pegged to an asset, but an added insurance is ensured when an asset is backed by a tangible item.

[1] Marco Polo and Rustichello of Pisa, "Book Second, Part I, Chapter XXIV: How the Great Kaan Causeth the Bark of Trees, Made into Something Like Paper, to Pass for Money over All His Country," in *The Book of Ser Marco Polo: The Venetian Concerning Kingdoms and Marvels of the East*, translated and edited by Colonel Sir Henry Yule, Volume 1 (London: John Murray, 1903).

Chapter 1

History of Fiat
Evolution of Financial Technology

Plastic Representations and Electronic Transactions

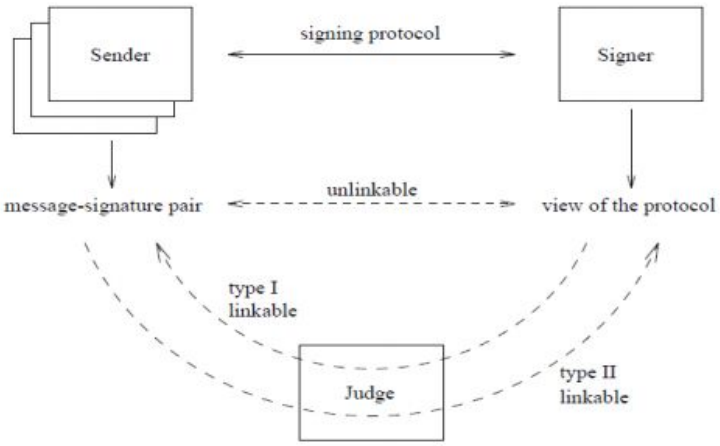
The evolution of money reveals barter to banks but many economists claim the use of physical cash and cheques will continue to decline and digital payments will continue its growth, eventually becoming the dominant means of financial transactions. As of 2020, Sweden, the United Kingdom and China are all close to being completely cashless economies. Digital payments are transforming retail and bringing numerous benefits to consumers, businesses, and the public sector.

This journey has taken 5,000 years and involved breakthroughs and innovations that gradually saw the use of physical cash make less and less sense.

Internet and World Wide Web

Digital transactions are inextricably connected to the birth of the internet. The online interface you see today is an evolutionary development of ARPANET which was constructed by the United States Defense Department during the Cold War and launched at the end of the 1960s.

In 1982, cryptographer David Chaum applied the idea of blind signatures to money in his paper “Blind Signatures for Untraceable Payments.” Blind signatures are a form of a digital signature where the content is disguised before it is signed and sent. Blind signatures can be publicly verified while remaining anonymous.



Eight years later Chaum took these cryptographic protocols to market with DigiCash, a company that ultimately went bankrupt in 1998.

In 1989 Tim Berners-Lee came up with the concept of web pages and sites that could be linked together using blind signature hyperlinks, giving birth to the world wide web. It was then, digital payments became a realistic proposition.

First Online Payment

Online payments began in the 1990s during the "Dot Com Boom," the speculative investment bubble that formed around internet companies between the early 1990s and 2000. The Stanford Federal Credit Union was the first institution to offer online banking services to customers in 1994. However, early online payment systems were not user friendly, typically requiring specialised knowledge of data transfer protocol.

The first digital payment companies were Ecash and Millicent, which offered micropayment systems and electronic alternatives to cash, such as tokens, e-money or digital cash. In 1994 Amazon added further impetus to these early digital payment efforts.

PayPal pioneered and remains leading in specialized online payment companies, starting as an online money transfer service in 1999. eBay largely fueled its rise in its infancy.

In 2007, PayPal was awarded an EU banking licence, during that time they had 35 million customers across Europe. PayPal continues to evolve. They've recently

spent $2.2 billion to acquire Swedish payment start-up iZettle, which offers a low-cost card payment device and a point of sale app for small businesses.

Digital Gold

In 1996 E-Gold launched as a digital money backed by precious metals purchased or sent in by users. The company slowly built a successful operation through the late 90s. By 2001 E-Gold was running into problems when the US Patriot Act tightened regulations on businesses that were classified as money transmitters. Gaining money transmitter licenses for all 50 states proved too big of a hassle for E-Gold and its competitors.

Furthermore, a campaign began to grow against E-Gold that marked it as the currency of money launderers and child pornographers. A federal indictment followed in 2005, which marked the end of E-Gold as a meaningful alternative currency.

Virtual Economy

In 1999 InterenetCash.com filed a number of patents to protect its monetary system based on prepaid cards. They relied on a network of participating merchants where cash could be redeemed. The company ultimately raised 10 million in funding and had a staff of approximately 70 employees before the dot-com crash forced the company to close in August 2001.

After the bubble burst, economic realities hit many internet startups. Digital money never appealed to the masses beyond several niche users, at least not until Satoshi Nakamoto published the Bitcoin white paper in 2008. The first Bitcoin was mined on January 3, 2009. Bitcoin and its offshoots have since experienced a great deal of success beyond their predecessors.

Chapter 1

History of Fiat
Present and the Future of Financial Technology

Tokens to Look For

Central banks around the world are exploring cryptocurrency as an official payment gateway. As we move towards a cashless society, real-world adoption for digital currency doesn't seem too far out of reach.

In early 2020 The Republic of the Marshall Islands started creating the Sovereign (SOV), a fully compliant digital currency that will be legal tender on the small Pacific Island. The plan is to issue SOV, in addition to the USD, which is an official fiat payment solution in the Marshall Islands.[2]

In Q1 2020, the Swedish central bank, Riksbank, stated they are also preparing the launch of a stable currency,the e-Krona. This will be a digital form of the fiat currency used in Krona.

The Public Bank of China (PBOC) has been researching and unofficially developing a digital version of the renminbi since 2014.[3]

It's not only the banks to launching Stablecoins:

In May 2019, it was announced that Kava Labs started building an XRP-backed Stablecoin called USDX. Kava Labs is currently backed by Ripple's Xpring initiative. The Stablecoin sits as a *central bank digital currency* (CBDC).[4]

Reserve Protocol launched a stable, yet decentralized currency, specifically designed to reduce financial instability to serve countries with high inflation rates. Reserve launched pilots in Venezuela and Angola, two countries facing economic turmoil in 2020.[5]

[2] https://www.sov.global/
[3] https://www.coindesk.com/digital-renminbi-a-fiat-coin-to-make-m0-great-again
[4]https://ambcrypto.com/xrp-backed-stablecoin-usdx-is-under-development-confirms-kava-labs-co-founder/
[5] https://reserve.org/

The Evolution of Financial Technology

The development of digital payments opened the doors to virtual banking. In 2011 ePayments gave consumers an efficient and cost-effective way to receive and make domestic and international payments. Virtual bank accounts brought money to computers or mobile devices, supporting a cashless approach to finances.

The idea of decentralized and encrypted money for untraceable payment has been around for several decades but became practical and widely familiar with the advent of Bitcoin.

Cryptocurrency is regarded as the next milestone in the evolution of money. By utilizing advanced technologies such as, blockchain, the financial industry promises to explore uncharted territory and continue to enhance means of exchange.

Chapter 2

History of Cryptocurrency
Definition and Cryptography

Bitcoin, first released as open-source software in 2009, is generally considered the first decentralized cryptocurrency. Since its introduction over 7,500 *altcoins* (alternative variants of bitcoin, or other cryptocurrencies) have been released in its wake. Cryptocurrencies have become a global phenomenon and have entered dozens of niches.

Definition and Cryptography

Cryptocurrency or “crypto”, is a digital asset designed to work as a medium of exchange or a store of value. Cryptocurrency uses strong cryptography, which is the practice or study of techniques for secure communication in situations of a third-party presence. Cryptography was developed for constructing and analyzing protocols that prevent others from reading private messages.

Cryptocurrencies evolved cryptography by using a decentralized control system, as opposed to a centralized digital currency or central banking systems. The decentralized control of each digital asset works through distributed ledger technology, typically using a blockchain that serves as a public financial transaction database.

Cryptocurrency is an internet-based medium of exchange that uses cryptographic functions to conduct financial transactions. Cryptocurrencies leverage blockchain technology for decentralization, transparency, and immutability. Although varied, cryptocurrencies share some technical and philosophical similarities:

1. The most important feature of a cryptocurrency is that it is not controlled by any central authority: the decentralized nature of the blockchain makes cryptocurrencies theoretically immune to top-down control and interference.

2. Cryptocurrencies can be sent directly between two parties with private and public keys. These transfers can be done with minimal processing fees, letting users avoid the steep fees charged by traditional financial institutions.

‘Ecash’ was the first form of anonymous cryptographic electronic money, it was invented in 1983 by American cryptographer, David Chaum. Digicash was implemented in 1995 by Chaum. Digicash was an early form of cryptographic electronic payments which required a user software to withdraw notes from a bank and designate specific encrypted keys before it can be sent to a recipient which allowed the digital currency to be untraceable by the issuing bank, the government, or any other third-party.

In the following year the NSA published a paper entitled ‘*How to Make a Mint: the Cryptography of Anonymous Electronic Cash*’, which described a cryptocurrency ecosystem, first publishing text in a MIT mailing list and later in 1997, it was published in ‘*The American Law Review*’ (Vol. 46, Issue 4).

Wei Dai published a description of "b-money", characterized as an anonymous, distributed electronic cash system in 1998. It was that same year, Nick Szabo described ‘Bit Gold,’ a “proof of work” function with solutions being cryptographically combined and published.

In Szabo’s ‘Bit Gold’ structure, participants dedicate computer power to solving cryptographic puzzles. In a ‘Bit Gold’ network, solved puzzles would be sent to the Byzantine fault-tolerant public registry and assigned to the public key of the solver. Each solution would become part of the next challenge, creating a growing chain of new property. This aspect of the system provided a way for the network to verify and time-stamp new coins, because unless a majority of the parties agreed to accept new solutions, they couldn’t start on the next puzzle.

When attempting to design transactions with a digital coin, you run into the "double-spending problem." Once data have been created, reproducing them is a simple matter of copying and pasting. Most digital currencies solve the problem by relinquishing some control to a central authority, which keeps track of each account’s balance. This was an unacceptable solution for Szabo. "I was trying to mimic as closely as possible in cyberspace the security and trust characteristics of gold, and chief among those is that it doesn’t depend on a trusted central authority," he stated.

Cryptography was expanded to: secure financial transactions, control the creation of additional units, and used in verifying transferred assets when applied to crypto’s blockchain technology.

Chapter 2

History of Cryptocurrency
Blockchain History

Blockchain History

Blockchain is a complex technology simply described as a chain of blocks, where digital information is saved within the “blocks” and then stored on a public database, or the “chain”. Within each block there’s a unique code termed “hash” which is it’s own personal identification. Hashes are cryptographic codes created by specific algorithms. The goal of blockchain is to allow digital information to be recorded and distributed

Blockchain technology was first outlined in 1991 by Stuart Haber and W. Scott Stornetta, two researchers who wanted to implement a system where document timestamps could not be tampered with. It wasn’t until almost two decades later, with the launch of Bitcoin in January 2009, that blockchain had its first real-world application.

The Bitcoin protocol is built on the blockchain. In a research paper, or the ‘white paper’ introducing the digital currency, Bitcoin’s pseudonymous creator Satoshi Nakamoto referred to it as “a new electronic cash system that’s fully peer-to-peer, with no trusted third party.”

A true Blockchain application saw success after fruition within financial technology when other digital assets failed to solve the “*double spending*” problem. This problem arises when digital transactions are copied, then assets can be spent twice. Bitcoin has thrived because it solves the “*double spending*” problem.

The first decentralized cryptocurrency, Bitcoin, was created in 2009 by presumably pseudonymous developer Satoshi Nakamoto. It used SHA-256, a cryptographic hash function, as its proof-of-work scheme. In April 2011, Namecoin was created as an attempt at forming a decentralized DNS, which would make internet censorship very difficult. Soon after, in October 2011, Litecoin was released. It was the first successful cryptocurrency to use scrypt as its hash function instead of SHA-256. Another notable cryptocurrency, Peercoin was the first to use a proof-of-work and proof-of-stake hybrid.

Chapter 2

History of Cryptocurrency
Blockchain Protocol

Blockchain Protocol

When one person pays another for goods using Bitcoin, ASIC Miners or computer components on the Bitcoin network race to verify the transaction. In order to do so, users run a program on their computers and try to solve a complex mathematical problem, called a “hash.” When a computer solves the problem by “hashing” a block, its algorithmic work will have also verified the block’s transactions.

As we described above, the completed transaction is publicly recorded and stored as a block on the blockchain, at which point it becomes unalterable. In the case of Bitcoin, and most other blockchains, computers that successfully verify blocks are rewarded for their labor with cryptocurrency. This is commonly referred to as "mining."

Although transactions are publicly recorded on the blockchain, user data is not—or, at least not in full. In order to conduct transactions on the Bitcoin network participants must run a program called a “wallet.”

Each wallet consists of two unique and distinct cryptographic keys: a public key and a private key. The public key is the location where transactions are deposited to and withdrawn from. This is also the key that appears on the blockchain ledger as the user’s digital signature.Even if a user receives a payment to their public key, they will not be able to withdraw them with the private counterpart.

A user’s public key is a shortened version of their private key, created through a complicated mathematical algorithm. However, due to the complexity of this equation, it is almost impossible to reverse the process and generate a private key from a public key. For this reason, blockchain technology is considered confidential.

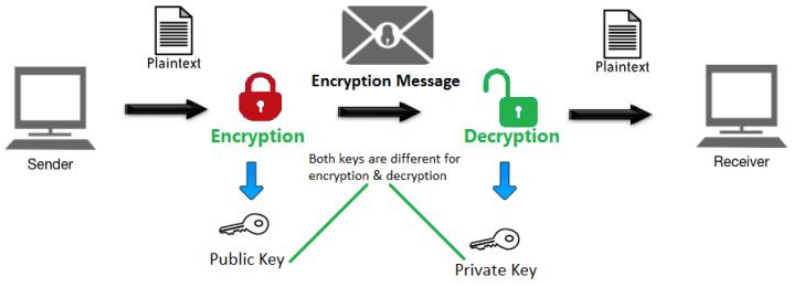
Chapter 2

History of Cryptocurrency
Key Basics and Single Public Chain

Public and Private Key Basics

A simplistic way to explain keys is to compare a public key to a school locker and the private key as the locker combination. Anyone can insert letters and notes through the opening in your locker. However, the only person that can retrieve the contents of the mailbox is the one that has the unique key.

It should be noted, however, that while school locker combinations are kept in the principal's office, there is no central database that keeps track of a blockchain network's private keys. If a user misplaces their private key, they will lose access to their bitcoin wallet.



Single Public Chain

In the Bitcoin network, the blockchain is not only shared and maintained by a public network of users but it is also agreed upon. When users join the network, their connected computer receives a copy of the blockchain that is updated whenever a new block of transactions is added. But what if, through human error or the efforts of a hacker, one user's copy of the blockchain was altered?

The blockchain protocol discourages the existence of multiple blockchains through a process called "consensus." In the presence of multiple, differing copies of the blockchain, the consensus protocol will adopt the longest chain available. More users on a blockchain mean that blocks can be added to the end of the chain faster. By that logic, the blockchain of record will always be the one that most users trust. The consensus protocol is one of blockchain technology's greatest strengths, but also a potential weakness.

Chapter 2

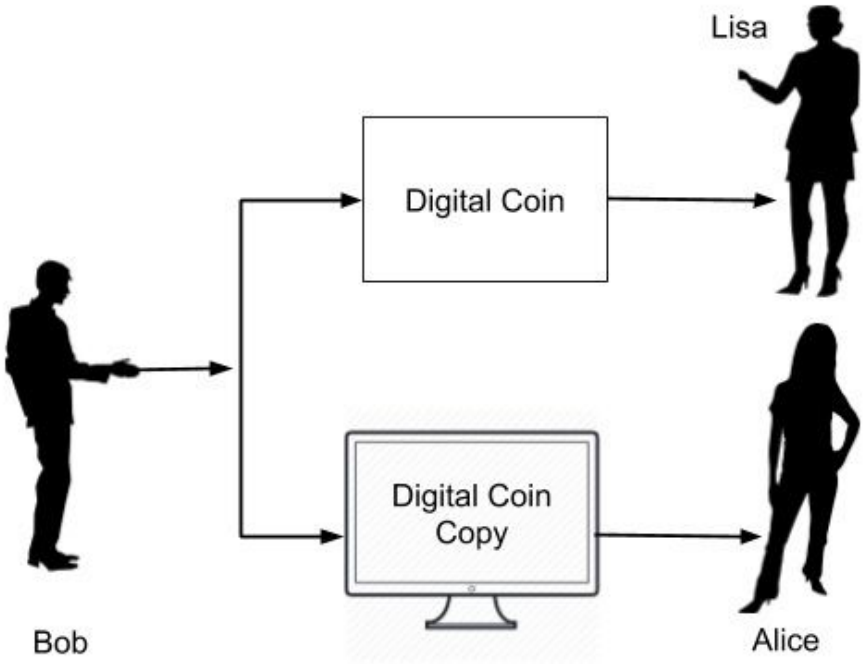
History of Cryptocurrency
Hacker-Proof Ecosystem & Harnessing Bitfury

Hacker-Proof Ecosystem

Theoretically, it is possible for a hacker to take advantage of the consensus protocol through a 51% attack.

Here's how it would happen.

Assume there are twenty million computers on the Bitcoin network. In order to achieve a majority on the network, a hacker would need to control at least 10.5 million and one of those ASIC Mining computers. In doing so, an attacker or group of attackers could interfere with the process of recording new transactions. They could send a transaction and then reverse it, making it appear as though they still had the coin they just spent. This vulnerability, known as double-spending, is the digital equivalent of a perfect counterfeit and would enable users to spend their bitcoins twice.



Such an attack is extremely difficult to execute on a blockchain of Bitcoin's size , as it would require an attacker to gain control of millions of computers. When Bitcoin was first founded in 2009 and its users numbered in the dozens, it would have been much easier. This defining characteristic of blockchain has been flagged as a weakness for fledgling cryptocurrencies.

User fear of 51% attacks can actually limit monopolies from forming on the blockchain. In "Digital Gold: Bitcoin and the Inside Story of the Misfits and Millionaires Trying to Reinvent Money," New York Times journalist Nathaniel Popper writes of how a group of users, called "Bitfury[6]," pooled thousands of high-powered computers together to gain a competitive edge on the blockchain. Their goal was to mine as many blocks as possible to earn Bitcoin, which at the time were valued at approximately $700 each.

Harnessing Bitfury

By March 2014, however, Bitfury was positioned to exceed 50% of the blockchain network's total computational power. Instead of continuing to increase its hold over the network, the group elected to self-regulate itself and vowed never to go above 40%. Bitfury knew that if they chose to continue increasing their control over the network, bitcoin's value would fall as users sold off their coins in preparation for the possibility of a 51% attack.

In other words, if users lose their faith in the blockchain network, the information on that network runs the risk of becoming worthless. Blockchain users, then, can only increase their computational power to a point before they begin to lose money.

[6] https://bitfury.com/

Chapter 2

History of Cryptocurrency
Blockchain's Practical Application and Bank Use

Blockchain's Practical Application

Blocks on the blockchain store data about monetary transactions, as previously discussed, but it turns out that blockchain is actually a reliable way of storing data about other types of transactions as well. In fact, blockchain technology can be used to store data about property exchanges, medical records, school grades, lineage records, stops in a supply chain, votes for a candidate, and more.

Professional services network, Deloitte recently surveyed 1,000 companies across seven countries about integrating blockchain into their business operations. Their survey[7] found that 34% already had a blockchain system in production today, while another 41% are expected to deploy a blockchain application within the next 12 months. In addition, nearly 40% of the surveyed companies reported they would invest $5 million or more in blockchain in the coming year.

Here are some of the most popular applications of blockchain being explored today.

Bank Use

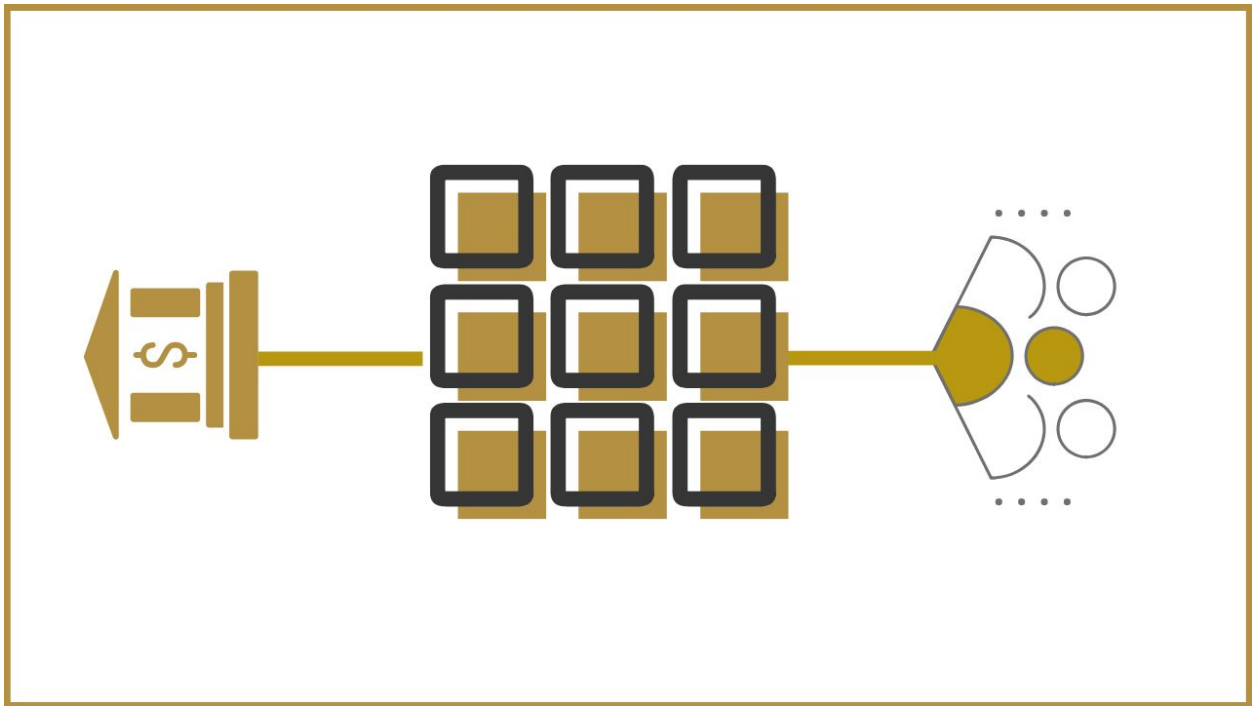
Perhaps no industry stands to benefit from integrating blockchain into its business operations more than banking. Financial institutions only operate during business hours, five days a week. That means if you try to deposit a check on Friday at 6 p.m., you likely will have to wait until Monday morning to see the money hit your account.

Even if you do make your deposit during business hours, the transaction can still take one to three days to verify due to the sheer volume of transactions that banks need to settle. Blockchain, on the other hand, never sleeps.

By integrating blockchain into banks, consumers can see their transactions processed in as little as 10 minutes, the time it takes to add a block to the blockchain.

[7]https://www2.deloitte.com/insights/us/en/topics/understanding-blockchain-potential/global-blockchain-survey.html

Blockchain gives banks the opportunity to exchange funds between institutions more rapidly and securely. In the stock trading business, for example, the settlement and clearing process can take up to three days (or longer, if banks are trading internationally), meaning that the money and shares are frozen for that time.



Given the size of the sums involved, even the few days that the money is in transit can carry significant costs and risks for banks. Santander, a European bank, put the potential savings at $20 billion a year.[8] Capgemini, a French consultancy, estimates that consumers could save up to $16 billion[9] in banking and insurance fees each year through blockchain-based applications.

[8]http://www.coindesk.com/santander-blockchain-tech-can-save-banks-20-billion-a-year/
[9]https://www.capgemini.com/news/consumers-set-to-save-up-to-sixteen-billion-dollars-on-banking-and-insurance-fees-thanks-to

Chapter 2

History of Cryptocurrency
Blockchain Use in Cryptocurrency and Open Fiance

Blockchain Use in Cryptocurrency
Blockchain is the bedrock of cryptocurrencies like Bitcoin. As we explored earlier, currencies like the U.S. dollar are regulated and verified by a central authority, usually a bank or government. Under the central authority system, a user's data and currency are at the whim of their bank or government. If a user's bank collapses or they live in a country with an unstable government, the value of their currency may be at risk. These are the worries out of which Bitcoin was borne.

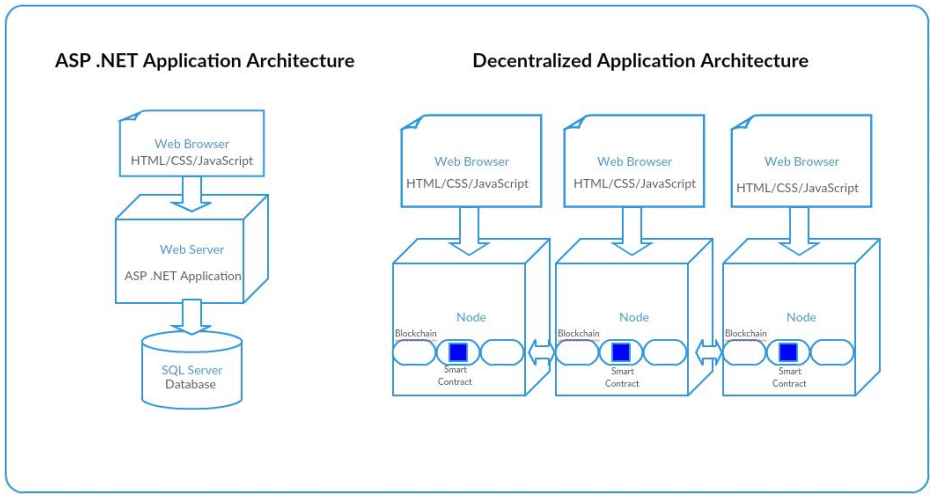
By spreading its operations across a network of computers, blockchain allows Bitcoin and other cryptocurrencies to operate without the need for a central authority. This not only reduces risk but also eliminates many of the processing and transaction fees. It also gives those in countries with unstable currencies a more stable option, more applications and a wider network of individuals and institutions they can do business with, both domestically and internationally when correctly implemented.

DiFi, or 'Open Finance'
Satoshi Nakomato constructed a dream to make impervious money and payment transactions feasible to all, despite location. Today's cryptocurrency community placed that dream into action when they saw the potential in an advanced, modern day economy.

The "DeFi" Decentralized Finance, also described as 'Open Finance', evolution takes our dream into a tangible reality, today.
Envision a world of independent people logging online with merely their smart devices and effortlessly using an open alternative to every financial service currently utilized today: not just payment transactions, but savings, trading, insurance, loans, data, storage, and much more.

Blockchain projects, such as Ethereum allow the "future of money' fantasy to breathe life in modern society with "Smart Contract" integration.
Blockgeeks.com states "A *smart contract* is a computer protocol intended to digitally facilitate, verify, or enforce the negotiation or performance of a *contract*. *Smart contracts* allow the performance of credible transactions without third parties." Source.

A Smart contract program operating on a blockchain can execute transactions automatically when coded conditions are achieved. This system enables developers to construct far more sophisticated functionality rather than simply receiving and sending digital assets. These programs are termed dapps, or decentralized applications. Dapps are simply understood as applications built on a decentralized technology, rather than being built and controlled by a single, centralized entity or company.



Technologists and economists alike imagine the future operating effortlessly using these protocols, however this ecosystem is currently being executed. You can witness automated loans negotiated directly between two unknown entities, globally, without the need of a central banking system.

Some DeFi dapps exist to allow the creation of Stablecoins.

What differentiates these DeFi dapps from their traditional bank or Wall Street counterparts? 2020 U.S. presidential candidate Michael Bloomberg has published a financial reform plan that among other things advocates for a stronger financial system. Part of the proposed reform also recommends the creation of a regulatory sandbox for startups and "providing a clear regulatory framework for cryptocurrencies." Wall Street still regards the cryptocurrency industry with a cautious degree of skepticism, but stablecoins are increasingly providing a clearer path to the mass-market adoption of the new asset class.

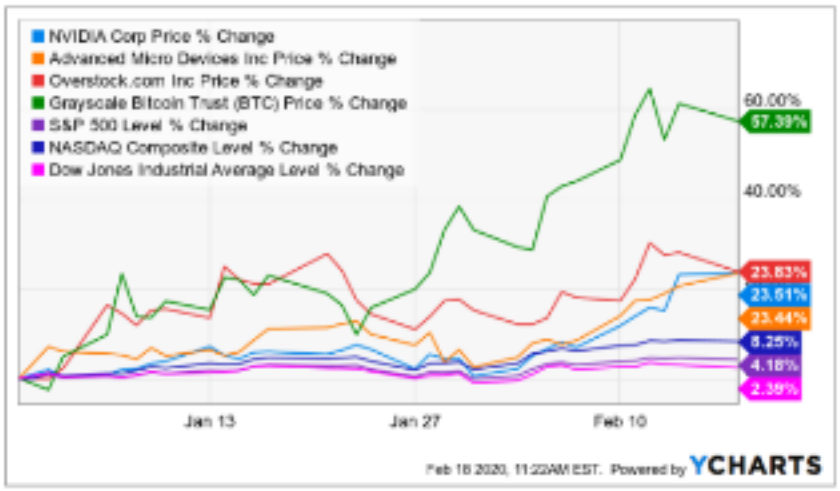
Stablecoins have risen in popularity to become a major source of liquidity in the cryptocurrency market. They provide an on-ramp to enter the crypto markets and an off-ramp to exit the cryptocurrency market. The rising popularity of stablecoins is a function of their inherent stability relative to other types of cryptocurrencies. This piece discusses how stablecoins are free from the historical volatility of cryptocurrencies and how they are evolving to offer different types of on-and off-ramp opportunities that will make cryptocurrencies more attractive on Wall Street.

Chapter 2

History of Cryptocurrency
Wall Street Testing

Wall Street Testing out Cryptocurrencies

Even though Wall Street is yet to be fully onboard the cryptocurrency train, several equities, ETFs, and traditional instruments provide some level of exposure to the industry. For instance, Nvidia Corporation (NASDAQ : NVDA)[10] and Advanced Micro Devices, Inc. (NASDAQ : AMD)[11] both have significant exposure to the crypto market because of the use of their graphics processors in crypto mining operations. In the year-to-date period, both Nvidia, and Advanced Micro Systems have delivered 23% as seen in the chart below.



Other stocks such as Grayscale Bitcoin Investment Trust (GBTC)[12] provides a more direct level of exposure to the crypto industry as a publicly-traded Bitcoin fund. Overstock.com, Inc. (NASDAQ : OSTK)[13] is one of the first traditional companies to adopt crypto payments and it currently keeps about 50% of its crypto payments, which ties its fate to the success or failure of the crypto market. In the year-to-date period, both Grayscale Bitcoin Trust and Overstock have delivered 56% and 25% gains respectively.

When compared to the rest of the US market in the year-to-date period, Wall Street assets with exposure to the cryptocurrency market have delivered double-digit gains. In contrast, the S&P 500, NASDAQ Composite, and the Dow Jones Industrial Average have only managed to deliver single-digit gains in the same period.

The rising popularity of stablecoins across different market segments

[10] https://www.insidermonkey.com/insider-trading/company/nvidia%20corp/1045810/
[11] https://www.insidermonkey.com/insider-trading/company/advanced%20micro%20devices%20inc/2488/
[12] https://finance.yahoo.com/quote/GBTC
[13] https://www.insidermonkey.com/insider-trading/company/overstockcom%20inc/1130713/

Tether USDT[14] is unarguably the biggest Stablecoin in the market, it has been enjoying a first-mover advantage since its launch in 2015. It has more than 80% of the market share for stable coins and it has managed to maintain parity with the USD despite the recurrent panic episodes that accompany significant drops in the price of Bitcoin. In 2019, the supply of USDT was increased from 2 billion tokens to 4.108 billion tokens to account for growing adoption. More so, the token was moved from the Omni-layer to the Ethereum network to facilitate the faster and cheaper transfer of value. Interestingly, a Chainalysis report shows that "for Chinese exchange users, Tether has replaced the yuan as the go-to fiat currency" as data from exchanges showed that almost all fiat-crypto trades in Mainland China was between Yuan and USDT.

Dollar Neutrino USDN[15] is an algorithmically stable USD-pegged asset that is collateralized with the WAVES blockchain platform. Waves is rapidly driving the adoption of DeFi products and they are gradually becoming a leader in the industry. In addition to providing stability, USDN provides token holders with additional revenue streams through staking in much the same way that traditional dividend stocks provide returns. Launched barely one month ago on January 28, 2020, the token now has more than $3.2 million staked as it delivers a staking reward of about 8.9% per annum. Facebook's plans to launch its cryptocurrency Libra in 2020 and many agencies in the European Union[16] and the United States wondering if this will be valuable to the world or not. Facebook, the largest social media platform in the world, has 2.4 billion users during this time.[17] While government bodies around the world are working to better understand crypto, regulations and laws pertaining to stablecoins aren't being implemented quickly enough, according to a global finance watchdog.

In a letter to finance ministers and central bank governors from the G-20 meeting in Riyadh this week, Financial Stability Board (FSB) Chair Randal Quarles voiced his concerns regarding how quickly digital currencies are affecting the global economy while regulatory action struggles to keep up.[18]

"FSB *members recognise the speed of innovation in the area of digital payments, including so-called 'stablecoins'. We are resolved to quicken the pace of developing the necessary regulatory and supervisory responses to these new instruments.*"

[14] https://coinmarketcap.com/currencies/tether/
[15] https://coinmarketcap.com/currencies/neutrino-dollar/
[16] https://cointelegraph.com/news/eu-cant-decide-what-to-do-with-libra
[17] https://ourworldindata.org/rise-of-social-media
[18]https://uk.reuters.com/article/us-g20-finance-regulation/regulators-need-to-get-up-to-speed-on-digital-currencies-idUKKBN20D1Y5

History of Cryptocurrency
Regulatory Responses

Regulatory Responses

The FSB is considering a public consultation on such regulations in April to evaluate the benefits and risks of stablecoins. Unregistered crypto companies continue to operate in Europe, while some exchanges in Brazil have been forced to shut down due to fines brought on by regulatory enforcement.[19]

Consisting of regulators, bankers and government officials from the G-20 countries, the FSB was established in 2009 as an early warning system in the event of another potential global financial crisis. They review and compile blockchain industry topics, updating market references and research ecosystems..

Currently, we are discussing stablecoins at market and government levels.

The Financial Stability Board (FSB) Chair Randal K. Quarles, wrote a letter outlining a schedule for recommendations about regulating Stablecoins. It treats Stablecoins as part of the cross border payments challenge.[20]

The FSB letter also talks about a public consultation to address the regulatory issues of Stablecoins in April. But its final output will be a “roadmap for enhancing cross-border payments, with practical steps and indicative timeframes.

[19] https://cointelegraph.com/news/brazilian-cryptocurrency-exchanges-hit-hard-by-tax-regulations
[20] https://www.ledgerinsights.com/financial-stability-board-fsb-stablecoin-regulation-g20/

Chapter 3

Fungibility and Non-Fungibility

Definition

The potential seen in financial technology expands far beyond digital tokens. Cryptocurrency enables individuals and companies to place IDs, certificates, real estate data and other important information of real world assets on the blockchain. Therefore, when discussing cryptocurrencies, one crosses the terms '*fungible*' and '*non-fungible*'.

Definition Important to Note in Stable Economies

Interesting enough, the word '*fungible*' derives from the Latin verb *fungi*, meaning "*to perform.*"

The dictionary describes *fungible* as an adjective meaning "*being of such nature or kind as to be freely exchangeable or replaceable, in whole or in part, for another of like nature or kind.*"[21]

The study of economics suggests fungibility is the property of a good or commodity which retains individual interchangeable units where each counterpart is indistinguishable from one another.

In common dialect it's important to consider *fungible* can be defined as "*interchangeable*," "*changeable*," "*fluid*," or "*malleable.*"

Generally speaking, it's a term most often heard in legal contexts, until digital assets became a topic of debate in reference to fungibility.

In efforts to fully understand stable assets, one should gain a foundation in *fungible* and *non- fungible* assets.

[21] https://www.dictionary.com/browse/fungible

Chapter 3

Fungibility and Non-Fungibility
Example and Everyday Case Uses

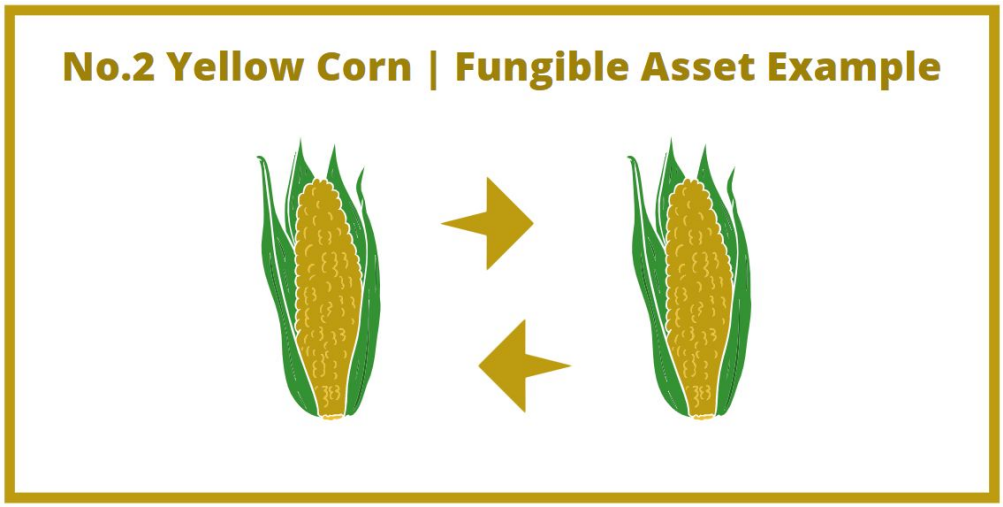
Example
Fungible assets are useful in stable economies because they simplify the exchange and trade processes, as fungibility implies equal value between assets.

Fungibility refers to non-distinguished entities. Fungible items are interchangeable, substitutable, or uniform.

One kilogram of pure gold is equivalent to another kilogram of pure gold, whether in the form of coins, ingots, jewelry, or in other states. Gold is fungible, despite the manifestation.

Another example is simply, $10 represented in a single ten dollar fiat bill is the same as $10 represented in two five dollar fiat bills.

When two commodities are considered fungible this implies they are identical in specification, or individual units can be mutually substituted. Consider specific grades of commodities in fungibility. No. 2 yellow corn is fungible because it does not matter where the corn was grown; all corn designated as No. 2 yellow corn are worth the same amount.



Other fungible commodities can include: company shares, bonds, crude oil, precious metals, and currencies. Fungibility refers only to the equivalence and indistinguishability of each unit in a commodity with other units of the same entity and not to the exchange of one commodity for another, which is termed barter.

Cross-listed stocks, which are identical shares of stock listed on the home country exchange and multiple global exchanges, are also considered fungible. The shares represent the same ownership interest in a firm, whether you purchased them on the New York Stock Exchange or the Tokyo Stock Exchange.

Although digital currencies, cryptocurrencies and Stablecoins are generally considered fungible assets, some are unique and non- interchangeable. An example of these digital collectables are non-fungible tokens [NFTs].

Blockchain is a disruptive technology that's changing financial technology. The list of records is found stored on an immutable intelligently designed distributed ledger. Each record, or block contains a cryptographic hash of a previous record and a timestamp and so creates a ledger, or a chain of blocks.

Since information, once stored on blockchain, cannot be altered, many trust the stored records on blockchain.

Proof-of-concept in blockchain technology was first introduced during 2009 in the Bitcoin White Paper by Satoshi Nakamoto. The first cryptocurrency appeared to fall in an asset class that shared some similar characteristics of traditional currencies.

The success of Bitcoin encouraged other developers to build new projects on blockchain technology, birthing a new digital economy. This brought more individuals to do research on the different categories of each owned digital asset for taxation purposes and otherwise.

What most people think about the blockchain economy today is actually built using fungible tokens and the majority of the excitement have come from big tech companies building cryptocurrencies based on this protocol.

Chapter 3

Fungibility and Non-Fungibility

Fungibility vs. Non-Fungibility

Fungibility vs. Non-Fungibility

Now there's a knowledge of fungibility, it's simpler to understand non-fungibility.

Take this real life scenario for an easy comparison of fungible goods and non-fungible items.

Imagine this Fungible Interaction

"Individual A" lends "Individual B" a $50 fiat bill.
When "Individual A" repays with a different $50 bill, as it is mutually substitutable or fungible, despite not being the same $50 fiat bill.

Just as, "Individual A" can be repaid with two $20 fiat bills and one $10 fait bill. This debt is still satisfied, since the total equals $50. "Individual A" repaid with fungible assets.

Conversely, non-fungible lending is also a possibility.

Imagine this Non-Fungibility, Interaction

"Individual A" lends "Individual B" a car.

When returning the borrowed item, it is not acceptable for "Individual B" to return a different car, even if it is the same make and model as the original car lent by "Individual A."

Cars are not fungible with respect to ownership, but the gasoline that powering cars is a fungible asset.

Assets like diamonds, land, art, homes, or baseball cards are not fungible because each unit has unique qualities that add or subtract value.

A common example of non-fungible transactions in finance include The Federal Reserve Bank of New York offering gold custody services to central banks and governments around the world by storing gold bars in its underground vault.

Protocol includes weighing each gold bar deposited into the vault. The refiner and purity markings on the individual bars are inspected to confirm they match the depositor instruction sheets. All data obtained is carefully monitored and recorded. Since the exact bars deposited to the New York Fed are the exact ones returned upon withdrawal, these types of gold deposits are not considered fungible.

In the economic world, semi-fungibility is also discussed and has been a debate in cryptocurrency from its beginning.

Semi- fungible goods are equal in some ways, but not in all. For instance, concert tickets to the same concerts but different seats and or rows, can be considered a semi-fungible. Both tickets have a close value, but may not be completely interchangeable, as seen in fully fungible items. Clothing and arguably altcoin cryptocurrencies fall into this category.

This is where the debate of fungibility comes into discussion.

The line between fungibility and non-fungibility may be a thin one.

Among non-fungibility and semi- fungible assets, it ultimately comes down to the entity's utility value, versus its perceived store value.

Chapter 4

Introduction to Stablecoins
Definition and History

Definition
A Stablecoin is a cryptocurrency pegged to another asset. Or, a digital currency with a fungible asset. Stablecoins have many case uses because they allow for secure and convenient transactions without the notorious volatility of traditional cryptocurrencies.

History of Stablecoins
While Satoshi Nakamoto believed Bitcoin would become a form of electronic cash, one of the world's first digital currencies is rarely used as a medium of exchange. Volatility and high fees make many cryptocurrencies impractical for daily transactions, which has confined them to being electronic stores of value rather than digital money.

Stablecoins offer all the benefits of cryptocurrency including:

- cryptographic security
- ability to transfer assets digitally
- speedy transactions

The Stablecoin concept officially appeared in the 2012 white paper for Mastercoin. The founders claimed their protocol would "*allow the binding of cryptocurrency to a stable traditional asset.*" *The Brief History of Mastercoin* can be found at blog.omni.foundation.

The original idea was to generate a digital currency pegged to and backed by fiat money. Investopedia describes *fiat money as "a government-issued currency that is not backed by a physical commodity, such as gold or silver, but rather by the government that issued it.*" Controversy stirred in the crypto communities, but in 2014 Steem and EOS founder, Dan Larimer, released BitShares, the first digital asset that provided investors with a safe hedge against the highly volatile cryptocurrency price swings. Nubits launched USNBT a few months after.

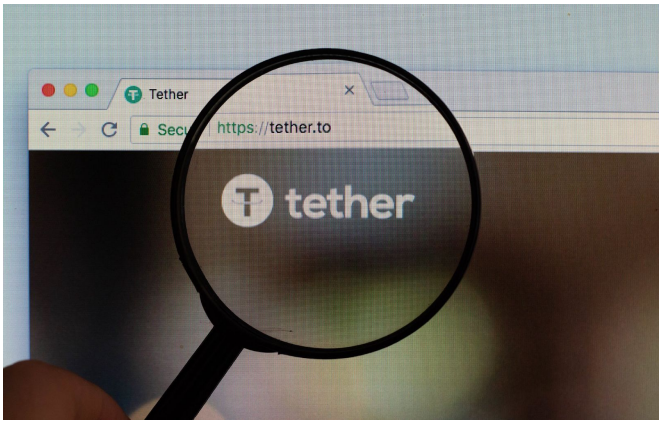
In 2015, RealCoin launched and later rebranded to Tether Limited. Tether is credited as the first full-fledged Stablecoin.

Tether or USDT is backed and pegged 1 : 1 to USD and was built on the OMNI blockchain but started migrating to the Ethereum blockchain in 2019. USDT has been the stable digital asset leader since 2015.

In 2016, USNBT lost its peg to the US Dollar, leading to the creation of a European analog called EURT.

January 2016, an Ethereum platform contributor aimed to create the Stablecoin, DigixDAO. DigixDAO had DGD tokens paying for different operations with DGX.

Steemit introduced SteemDollar (SBD) to stabilize the rewards system on the social blockchain platform Steemit. SBD pegged 1:1 to USD. In December 2017, SBD reached an all-time high of $13.81.



Allegations against Tether (USDT) started to surface in 2017, when rumors from one of their legal advisors suggested Tether wasn't fully backed 1 : 1 with the USD. Only recently Tether representatives admitted that only 74% of the coin was backed by USD, making it a fractional reserve Stablecoin. Bitfinex, the company behind Tether reported a $850 million loss in Tether funds that they plan to supplement by using raised for their new asset exchange token, LEO.

Stablecoins have become a mainstay of the financial industry, with a peak of 30 project launches in 2018. In March 2018, Tether was the only Stablecoin in the market cap top 30. By 2019 there were over two-hundred projects and in March 2019, ten percent of the top 30 cryptocurrencies were Stablecoins. Many experts expect that number to exponentially increase in 2020 and 2021.

Chapter 4

Introduction to Stablecoins

Purpose & Need

A Stablecoin attempts to:

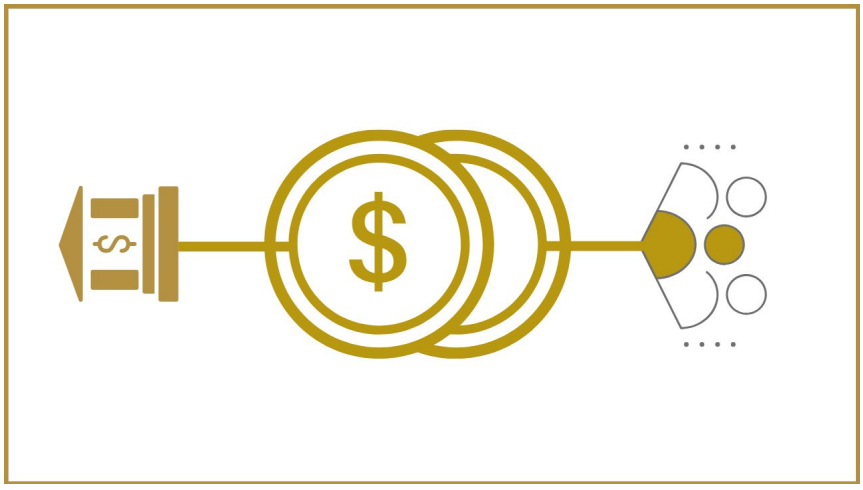
- Create stability among cryptocurrency trading pairs in forex-style trades.
- Automatically reduce risk and diversify portfolios during critical junctures.
- Aim for effortless transactions like traditional currencies.
- Facilitate the adoption of digital currencies.
- Form a new financial ecosystem.
- Assist in investment predictions by minimizing market volatility.
- Provide global access to a stable currency, protecting nations plagued by hyperinflation.

Chapter 4

Introduction to Stablecoins

Stablecoin Advantages

- **Aids in Adoption.** Acceptable bridge from fiat to cryptocurrency.
- **Benefits of Cryptoconomy**. Low fees, secure transactions, partially or completely anonymous.
- **Blockchain Technology Utilized.** This ledger system brings security, transparency, and accountability.
- **Decentralized Applications or *DApps***. In-app purchases are sometimes seen as better options over using a utility token when token volume is low, volatile in price, or a combination of both.
- **Hedge**. Offers a safe hedge against fiat currency in countries with challenging economic conditions.
- **Simple.** System is easy to understand for fiat and digital currency users.
- **Smart Contracts.** Placed to protect all parties with interest in investments.
- **Stable**. Asset-backed, reducing volatility in market fluctuations.
- **Regulations.** Fiat-involving processes involved.
- **Remittance**. Transferring payments internationally is costly, unsecured, and potentially time consuming. Stablecoins aim to solve these problems.



Stablecoin Economy

Introduction to Stablecoins
Stablecoin Disadvantages

- **Anonymity**: Official companies behind stablecoin projects need to be compliant with governmental authorities. This can affect anonymity because customers need to go through a KYC/AML process before they can buy a stablecoin. In some countries it is difficult to buy a stablecoin directly with your bank account.

- **Centralized**. Centralization in this ecosystem refers to the asset being backed by a central authority. In traditional financial institutions there is a risk that the custodian can go bankrupt. This single point of failure is a problem blockchain aims to solve.

- **External Audits Needed.** To ensure assets are accounted for.

- **Hyperinflation**: If a Stablecoin is pegged to a fiat facing inflation, the coin will follow.

- **Necessity**: Over time new markets tend to see decreasing price volatility. If Bitcoin and other cryptocurrencies stay relatively stable, the demand for Stablecoins may change. This decrease in volatility, however, could still be years away.

- **Lack of Familiarity.** New technology takes time to gain mass acceptance because people need to understand it first.

- **Reduced Return on Investment.** Traders and investors look to other means for financial gain.

- **Regulations.** Fiat-involving processes involved.

- **Requires Third Party**. Requires trust from an entity.

Chapter 4

Introduction to Stablecoins
Stablecoin Protocol

Satoshi Nakomato constructed a dream to make impervious money and payment transactions feasible to all, despite location. Today's cryptocurrency community placed Nakomato's dream into action when they saw the potential in an advanced, modern-day economy. Financial technology is still in its infancy but continues to evolve.

"DeFi," or Decentralized Finance, also described as 'Open Finance', brings Nakamoto's vision closer to fruition.

Imagine a world of independent people effortlessly logging into an open alternative to every financial service available today: not just payment transactions, but savings, trading, insurance, escrow, loans, data, storage, and more.

Ethereum breathes life into the "future of money" with its easily integrable smart contract system.

According to Blockgeeks.com "a *smart contract* is a computer protocol intended to digitally facilitate, verify, or enforce the negotiation or performance of a *contract*. *Smart Contracts* allow the performance of credible transactions without third parties."[22]

A Smart Contract program operating on a blockchain can execute transactions automatically when coded conditions are met. This system lets developers construct functions that go well beyond digital assets. These programs are termed *Dapps*, or decentralized applications. Dapps are applications built on a decentralized technology, as opposed to being built and controlled by a centralized entity.

Technologists and economists imagined the future operating effortlessly with protocols like these, but it is no longer relegated to the realms of science fiction. You can witness automated loans negotiated directly between two unknown entities, globally, without the need of a central banking system *right now*.

[22] https://blockgeeks.com/guides/smart-contracts/

Chapter 4

Introduction to Stablecoins
Examples

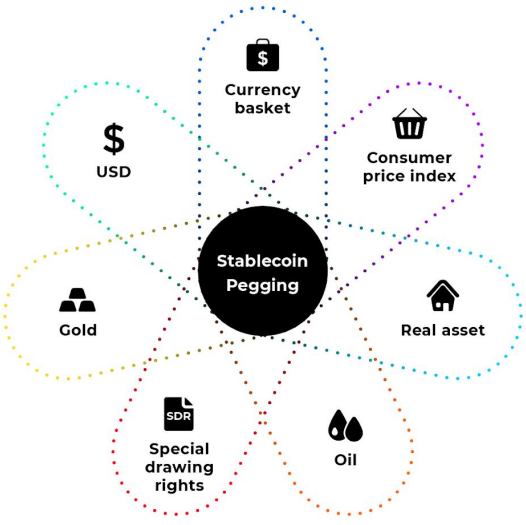
Stablecoins are tied to real world assets like sovereign fiat, gold, corn, oil, sugar, diamonds, wheat, sugar, etc.

A stable asset-backed cryptocurrency makes a great digital currency for everyday use. Some case examples include:

- **Loan Payments.** Financial loans with benefits of "*smart contracts*"
- **Ordinary Payments**. Everyday transactions.
- **Recurring Payments**. Mortgages, rent, subscriptions.

Recently, Blockimmo, a real estate company focused on tokenizing real estate, initiated an online property sale where investors could buy a piece of the building. Blockimmo used XCHF, a Stablecoin tied to the Swiss Franc (CHF) as a payment option, keeping the price steady during the entire transaction process. The XCHF is pegged 1 : 1 to the Swiss Franc (CHF).

Case uses for Stablecoins are multiplying as the public becomes more aware of their benefits, namely, the absence of sudden and unwanted price movements. Fluctuations among the Stablecoins with the highest valuations do not exceed 3%.



Chapter 4

Introduction to Stablecoins
Criticisms & Quotes

Vitalik Buterin in a 2014 Ethereum article, "Are stable-value assets necessary?"[23] *Buterin states, "Given the high level of interest in 'blockchain technology' coupled with disinterest in "Bitcoin the currency" that we see among so many in the mainstream world, perhaps the time is ripe for stable-currency or multi-currency systems to take over. There would then be multiple separate classes of crypto assets: stable assets for trading, speculative assets for investment, and Bitcoin itself may well serve as a unique Schelling point for a universal fallback asset, similar to the current and historical functioning of gold."*

UC Berkeley's Computer Security Researcher, Nicholas Weaver wrote Stablecoin Tether is "*the primary vehicle for hiding money flows by allowing customers to switch between different cryptocurrencies. In short, they represent a significant problem.*"

Monax founder Preston Byrne writes, "*fiat-world examples of pegged assets form an object lesson in why you don't try to peg currencies: because you are unable to hold the peg any longer than you can afford to subsidize your differences of opinion with the market.*" Later stating that Stablecoins are "*the techno-magical idea that a cryptocurrency can tell the market what its price should be, rather than the market determining what a cryptocurrency's price should be.*"

"*Distributed Stablecoins aim to achieve both the characteristics of crypto-coins like Bitcoin (censorship resistant digital transactions) and the price stability of traditional financial assets, such as the US Dollar or gold. These systems are distinct from tokens such as Tether, where one entity controls a pool of US Dollar collateral, ultimately making the system centralised and thus susceptible to being*

> Physical wealth has not necessarily been very secure.
>
> NICK SZABO

[23] https://blog.ethereum.org/2014/11/11/search-stable-cryptocurrency/

shut down by the authorities." Preston Byrne[24]

Nick Szabo believes central banks could soon turn to cryptocurrencies to shore up reserves, Finance Magnates reports, "*There's going to be some situations where a central bank can't trust a foreign central bank or government with their bonds for example. One solution that's been developed is to have the Swiss government hold it for you – that's not a trust minimised solution. The Swiss government itself is subject to political pressures and so a more trust minimised solution is cryptocurrency.*"

"*Tyler and Cameron Winklevoss, Bitcoin (BTC) bulls and founders of the cryptocurrency trading platform Gemini, have said stablecoins and tokenized securities will usher in a bright future for the digital currency space. The twins made their remarks during an interview on Fortune's crypto-focused news segment The Ledger on Jan 14, 2019… Cameron further noted that with at least 60 percent of $100 bills now held overseas, dollars on the blockchain are poised to significantly reshape the global currency market.*"released on CoinTelegraph 14, January 2019.[25]

Adam Back is known for being among the first to work with Bitcoin and inventing the hashcash"proof of work" system. "*I think that blockchains are more about permissionless, uncensorable usage and free market money - separating money from state - using a gold-like mined digital commodity money: Bitcoin. I think while it is possible and useful for some use cases, like crypto trading, to have Stablecoins, they inherently fall short of Bitcoin as they have custody risk, and if there is a central bank underwriting also traditional establishment interests reflected in the operation which may look unattractive to users.*"...

"*Companies after all do have a financial interest to reduce signup and usage friction experienced by users. Governments are more insulated from market competition-being policy monopolies. So, we'll see how things develop in various countries, but I would think of today's stablecoins as lacking much of the self-sovereignty properties of Bitcoin, and potential future central government operated ones similarly.*"

In Q4 2019, two members of the House Financial Services Committee, Reps. Sylvia Garcia, D-Tex. and Lance Gooden, R-Tex., proposed the Managed Stablecoins are Securities Act of 2019 Bill on the day of a committee hearing on the role of big data in financial services on November 20. Garcia said managed Stablecoins "*are clearly*

[24] https://blog.bitmex.com/a-brief-history-of-stablecoins-part-1/
[25]https://cointelegraph.com/news/winklevoss-twins-believe-stablecoins-tokenized-securities-are-future-of-crypto-innovation

securities under existing law." Garcia continued, "*Bringing clarity to the regulatory structure of these digital assets protects consumers and ensures proper government oversight going forward.*" Lance Gooden brought light to the bill being necessary to help consumers understand the financial assets they are buying. "*In what are called 'managed stablecoins', we have trusted brands marketing digital assets to consumers as secure and stable... Everyday investors need to know they can trust the issuers behind their financial assets. This bill would bring them the security they deserve by applying the laws we use to regulate financial securities to this new breed of digital currencies.*"[26]

STABLECOIN ECONOMY
GUIDE TO SECURE DIGITAL FINANCE

[26]https://sylviagarcia.house.gov/sites/sylviagarcia.house.gov/files/wysiwyg_uploaded/Managed%20Stablecoins%20are%20Securities%20Act%20of%202019%20Bill%20Text_3.pdf

Chapter 5

Key Factors for Evaluating Stablecoins

Before obtaining a Stablecoin, it's wise to consider a few key factors:

- **Auditability**. If not completely decentralized, do users have access to audit the systems financial fundamentals to confirm collateral?

- **Collateralization** is to "offer an asset as a surety that a debt will be repaid." When 'collateral' or 'collateralization' is used in Stablecoin's terminology, it's the asset the borrower leverages in order to secure a loan from the issuer. What is the collateral behind a Stablecoin?

- **Fallback methods.** What are the procedures in the event of a system failure? What happens to assets? How do regulations protect users?

- **Growth**. Does this ecosystem have the potential to become more valuable in the short term? Long term? Is the technology scalable, can it support sustained growth?

- **Maintenance**. What is the overall cost? The ecosystem loses efficiency with high overhead costs including excessive fees, thus risking market fluctuation.

- **Pegging**. Stablecoins are often pegged by an entity. Investopedia defines this term as "*a central bank's open market operations meant to stabilize its country's currency to that of another country by fixing its exchange rate.*"

- **Redeemability**. Are users freely able to redeem their tokens in exchange for the underlying asset?

- **Stabilization methods.** Why is this a sound investment, what are the underlying reasons?

- **Transparency**. Are ledgers open and viewable by users?

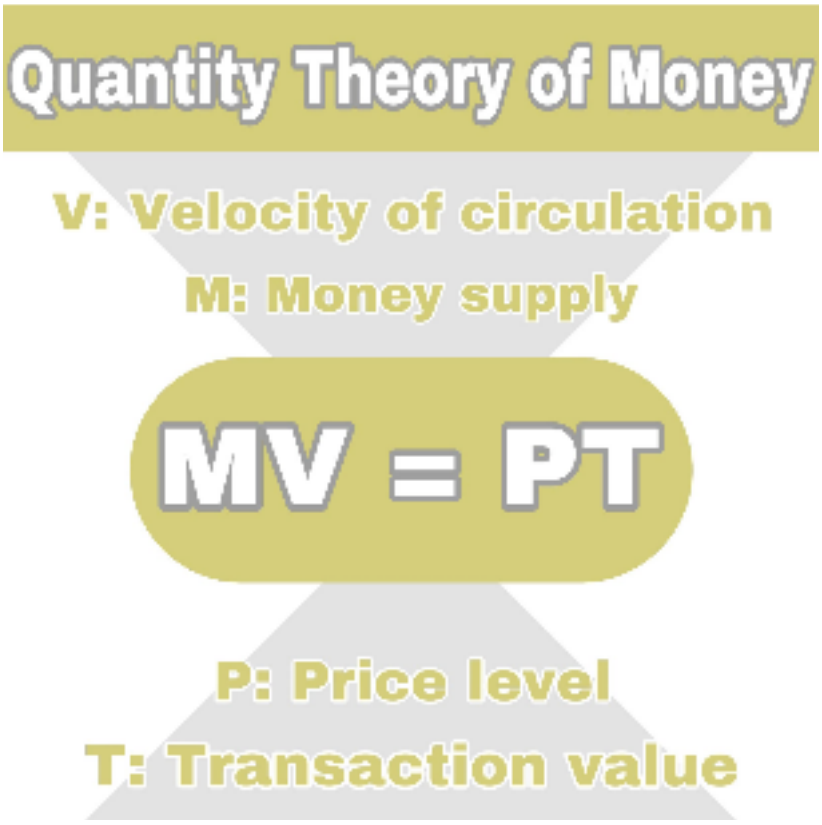
Chapter 6

Where to Find Stability
Quantity Theory of Money

Many Stablecoin White Papers claim their cryptocurrency is inspired by The Quantity Theory of Money.

The infographic shown below is termed The Fisher Equation.

Irving Fisher and Milton Friedman developed this equation in the 20th century. It was based on the popular orthodox theory by 17th-century classical economists, Quantity Theory of Money.[27]



Simply

In practice, the Quantity Theory of Money recommends changing currency supply to maintain price stability.

Money Supply multiplied by Velocity of Circulation is equal to Price Level multiplied by Transaction Volume. (M x V = P x T)

If M doubles while V and T remain constant, then P theoretically will double, cutting the value of each individual unit of currency in half.

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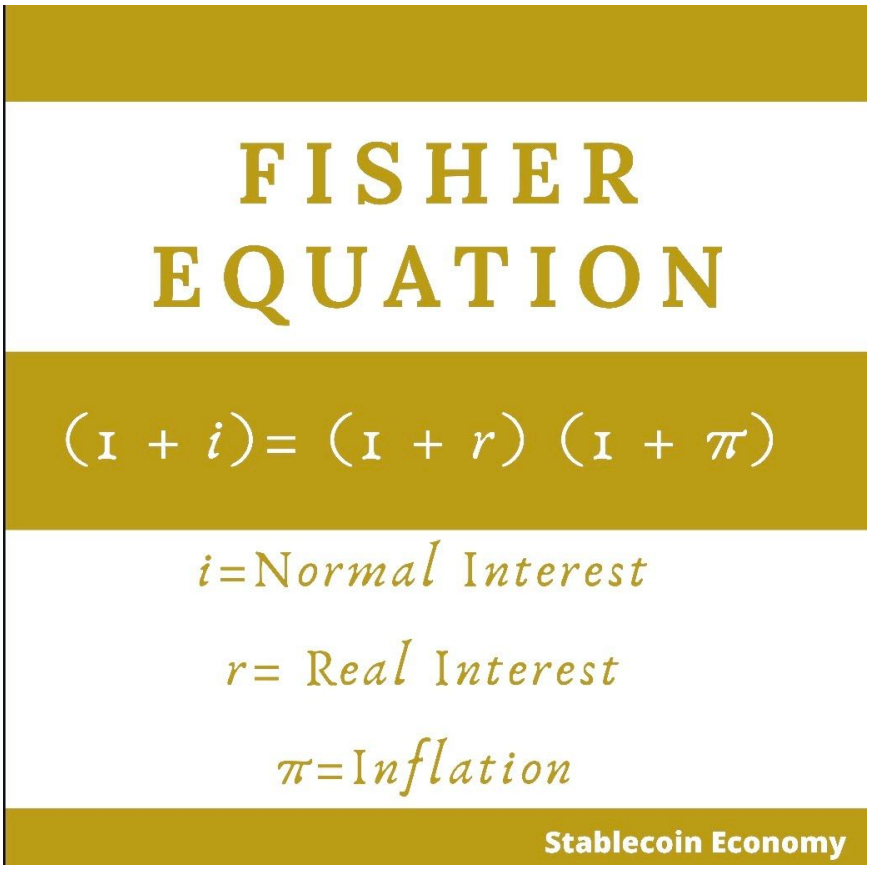
[27] **The Quantity Theory of Money argues in the long run, currency value, alike commodities, can change in accordance with supply. If the exchange rate today is $1 = ₩2000 (weaker KRW), the exchange rate could become $1 = ₩1000 (KRW appreciates) by decreasing circulating KRW by half.*

The majority of economists accept The Fisher Equation as valid over the long run. This model suggests Stablecoins will keep drastic price changes at bay by adjusting units in circulation.

If a Stablecoin's value drops below a certain price point, its users drive the cryptocurrency to be scrapped, reducing the total number of tokens and stabilizing its value. If the token's value rises beyond a certain price point, users incorporate more supply to keep cryptocurrency at desired market value.

Most economic models are imperfect. There are some problems with The Quantity Theory of Money. An example being that V and T are assumed to be constant in the long run. Consequently, M and P are perfectly proportional.

This theory was developed based on an advanced economic structure that assumes money velocity and transactions are proportional.



Blockchain projects are rapidly changing and the technology is in its infancy, therefore it's difficult to calculate token velocity and transaction volume, let alone make any assumptions about constancy.

Considering V and T as variables, it may be time, once again, to add more variables to The Fisher Equation.

MV = PT

Money Supply X Velocity of Circulation = Price Level X Transaction Volume

Chapter 6

Where to Find Stability
Historically Stable Commodities Plummet

Ancient History shares an economic nightmare caused by a single king with a thirst for wealth.

> "*Mansa Musa I was the ruler of the Mali Empire in West Africa from 1312 to 1337 CE. Controlling territories rich in gold and copper, as well as monopolising trade between the north and interior of the continent, the Mali elite grew extremely wealthy. A Muslim like his royal predecessors, Mansa Musa brought back architects and scholars from his pilgrimage to Mecca who would build mosques and universities that made such cities as Timbuktu internationally famous. Mansa Musa's 1324 CE stopover in Cairo, though, would spread Mali's fame even further and on to Europe where tall tales of this king's fabulous wealth in gold began to stir the interest of traders and explorers. Mansa Musa, the Mali Empire's greatest ever ruler, was said to have spent so much gold in the markets of the Egyptian city that the value of plummeted.*"

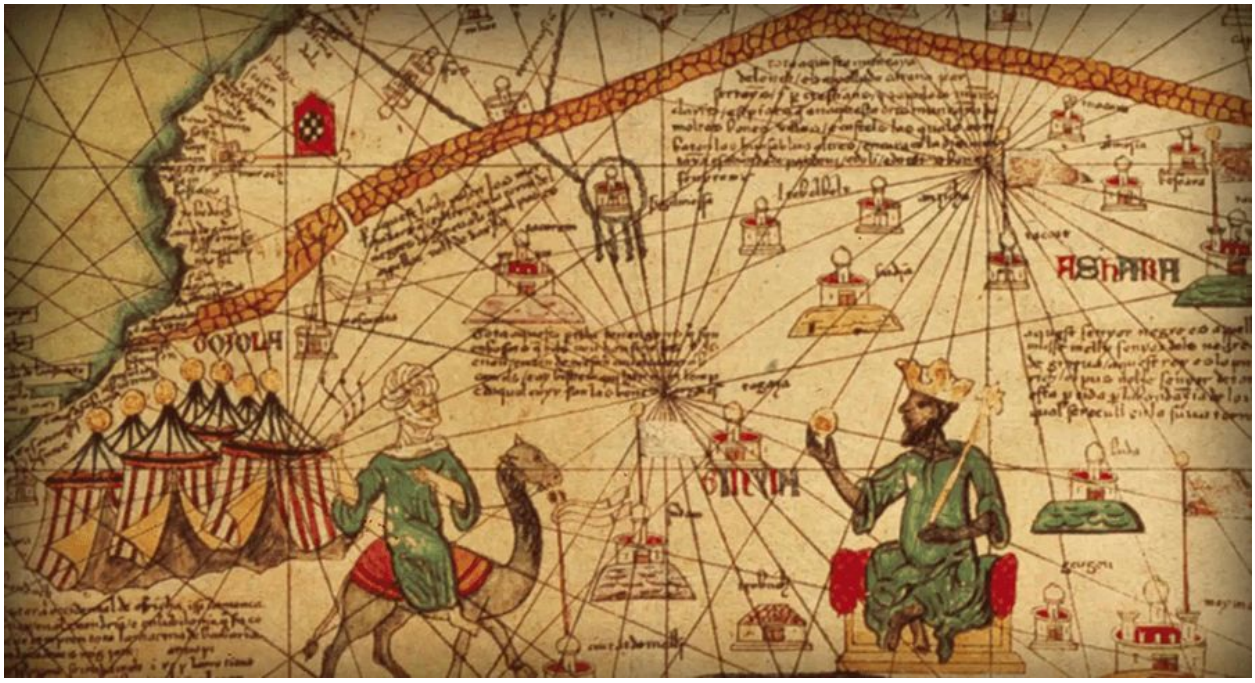
Mansa Musa started a pilgrimage to Mecca in 1324 CE, "*but when he arrived in Cairo in July of that year en route, he caused an absolute sensation. The Mali ruler's camel caravan had crossed the Sahara and when he arrived in Egypt*[28], *even the Sultan was astounded by the wealth this West African king had brought with him. In some accounts, each of 100 camels carried 135 kilos (300 pounds) of gold dust while 500 slaves each brandished a 2.7 kilo (6 pounds) gold staff. In addition, there were hundreds of other camels loaded down with foodstuffs and textiles, horse riders waving the huge red and gold banners of the king, and an impressive human entourage of servants and officials that*

[28] https://www.ancient.eu/egypt/

numbered in the tens of thousands. In an extreme gesture of largesse, Mansa Musa would give away so much gold and his entourage spend so much shopping in the markets of the city that the value of gold dinar in Cairo crashed by 20% (in relation to the silver dirham[29]); it would take 12 years for the flooded gold market to recover."

The story of a major economic crash continues to become more astonishing and damaging to those in proximity.

> "*The merchants of Egypt, in particular, were delighted with all these naive tourists suddenly milling about their markets and they took full advantage, raising their prices and relieving the shoppers of their gold at any opportunity. Indeed, Mansa Musa and his people so overspent that they left the city in debt, a factor which contributed to later Egyptian investment within the Mali Empire so that the merchants could recoup some of the value of the goods they had given on credit.*"



[29] https://www.ancient.eu/Silver/

The wondrous concluding tale of one of the most mysterious kings leaves many wondering if the crowned conquer led generations to come on a dangerous path to greed, risking other resources, illness, famine, family, and even death. Mansa Musa is currently noted as the 12th richest man in existence, but at what cost to the rest of the world?

> "*An indication of the impression Mansa Musa had made is that news of his Cairo visit eventually reached Europe. In Spain, a mapmaker was inspired to create Europe's first detailed map of West Africa. Created c. 1375 CE, the map, part of the Catalan Atlas, has Mansa Musa sitting regally on a throne, wearing an impressive gold crown, and holding a golden staff in one hand and, somewhat gleefully, a huge nugget or orb of gold in the other. It was such tales of gold that would inspire later European explorers to brave disease, warlike tribes, and inhospitable terrain to find the fabled riches of Timbuktu, the golden city of the desert that nobody quite knew where to place on the map even in the 18th century CE.*"[30][31]

This account is not only a warning, it can sit as inspiration for the financial technology world. As technological advances emerge, inventors, developers, economists and regulators should consider economic crises such as these to formulate stronger currencies and protocols to prevent such devastating events.

[30] https://www.ancient.eu/Mansa_Musa_I/
[31] Mansa Musa Illustration by M.Hassan.Qureshi (CC BY-SA) https://www.ancient.eu/image/10138/mansa-musa-illustration/

Chapter 6

Where to Find Stability
The Gold Standard

Throughout history periods exist where many agreed, a single commodity retained value. Gold, historically speaking, has been determined as valuable and this is where the idea of the *Gold Standard* was manifested.

A *gold standard* is a monetary system in which the standard economic unit of account is based on a fixed quantity of gold. The gold standard was widely used in the 19th and early part of the 20th century. Most nations abandoned the gold standard as the basis of their monetary systems at some point in the 20th century, although many still hold substantial gold reserves.[1]

The appeal of a gold standard is that it wrestles control of issuance of out of the hands of imperfect human beings. With the physical quantity of gold acting as a limit to that issuance, inflation can be curtailed.

The goal of monetary policy is not just to prevent inflation, but deflation as well, while promoting a stable monetary environment. A brief history of the U.S. Gold Standard is enough to show that the gold standard is a way to avoid inflation, but strict adherence can create economic instability.

Bitcoin is arguably a better investment asset in comparison to gold, as it cannot be controlled by governments or banks. Furthermore, it is capped, meaning only a set number will ever exist. Once all 21 million Bitcoins are discovered, there will be no more to mine and its value will increase as scarcity grows.

Bitcoin is backed by science, technology, and mathematics. It's run by a social consensus implemented through an algorithm. In the past, The Gold Standard was often implemented as a monetary policy, backing fiat to gold. Although, gold coins were no longer a circulating currency by the 1930s and the world entirely abandoned the gold standard by 1971.

> "*The world consumption of new gold produced is about 50% in jewelry, 40% in investments, and 10% in industry. Gold's high malleability, ductility, resistance to corrosion and most other chemical reactions, and conductivity of electricity have led to its continued use in corrosion resistant electrical connectors in all types of computerized devices (its chief industrial use).*"[32]

Crypto fanatics relish in their new proposed gold standard "….continued use in corrosion resistant electrical connectors in all types of computerized devices (its chief industrial use)." Simply, gold can be melted down to power ASICs, which are used to mine and transfer Bitcoin, birthing a new digital gold rush.

[32] https://medium.com/u/108319a4c14d

Chapter 6

Where to Find Stability
Current Value in Gold

Current Value in Gold

It's fair to state, gold is an accepted but dated commodity. Practical uses aside, gold has kept its value largely related to tradition.

Traditionalists argue Bitcoin is far too volitible for investments and claim the common phrase "*gold is king*". Many claim during times of economic downfalls gold is still a safer investment, but please note our previous mention of Mansa Musa and allow the words of a contemporary Arab historian to remind, even the most stable commodities can suffer a major impact by a single event or entity.

> "*Gold was at a high price in Egypt until they came in that year. The mithqal did not go below 25 dirhams and was generally above, but from that time its value fell and it cheapened in price and has remained cheap till now. The mithqal does not exceed 22 dirhams or less. This has been the state of affairs for about twelve years until this day by reason of the large amount of gold which they brought into Egypt and spent there…*" Chihab Al-Umari, Kingdom of Mali

When considering investing, look at this chart analysis of $BTC and $GOLD.

"This chart compares the performance of gold in the last 43 years and that of Bitcoin since its inception. It was originally posted by Twitter user Nunya Bizniz, who described the charts as having an "uncanny" resemblance."[33]

[33] https://bitcoinist.com/gold-bitcoin-history-identical/

Chapter 6

Where to Find Stability
Current State and Future of Gold and Crypto

Current State and Future of Gold and Crypto

We are currently on the edge of “what’s more beneficial to invest in: Bitcoin or Gold?” Currently, you can invest in either and there’s ways to keep your investments from completely falling flat, or as previously mentioned one has the ability to obtain both by investing in a legit gold-backed and pegged Stablecoin.

It’s wise to remember, Bitcoin and gold are completely different assets with different case uses. The first cryptocurrency can’t replace gold as a precious physical asset as it will never be a tangible commodity, while volatility limits Bitcoin’s ability to be a ‘safe haven’ for investors. Fear, as well as general lack of education, leaves Bitcoin in a difficult transition phase.

Bitcoin maximalists and crypto users alike have reason to be hopeful when comparing gold to cryptocurrencies. Bitcoin is in its infancy, yet retains a historical chart nearly identical to one of the world's most trusted investments. Experts are questioning how these charts and assets will evolve as the world also continues to emerge further into the digital age, especially after the economic downfall related to the COVID-19 pandemic.

Chapter 7

Complete Stablecoin Guide

Types of Stablecoins

Asset-Collateralized vs. Non-Collateralized

Define Asset-Collateralized Stablecoins

The socially agreed upon currency most countries use is termed 'fiat', which literally means "*something that was created without effort*." As previously noted, until 1971 most currencies were backed by gold or silver. Before the ascent of paper money, diamonds, silver, gold, land, real estate and other goods were used in its stead.

Shifting from an asset backed currency to the current fiat system left centralized banks, governments, financial technologists, private entities, and economic experts with the concept of Asset-Collateralized Stablecoins. Their purpose is to tokenize stable assets on a blockchain, and so serve as a means of speedy, secure, and stable daily transactions. Stablecoins in this category should be guaranteed to exchange 1 Stablecoin for 1 unit of its underlying asset.

Define Non-Collateralized Stablecoins

One argument is that fiat is not backed by any tangible asset, thus, why should cryptocurrency only have value as an Asset-Collateralized Coin? The opposing argument claims currency must have some agreed upon "value."

Sovereign currency is backed by the indentured population through the use of credit systems, as well as, monetary and fiscal policy. Ultimately, it's the individual's time that is given up for the extension of credit.

Non-collateralized Stablecoins were created as a medium. This digital currency is not backed by anything real or digital, but instead, maintains value through expectations. The main Non-collateralized approach is the Seigniorage Supply (Algorithmic) Stablecoin Model, which will be covered in the following chapters.

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Complete Stablecoin Guide

Comparative Chart of Stablecoin Categories

Stablecoin Type	Stablecoin Category	Advantages
Fiat-Collateralized Stablecoins	Asset Collateralized	• **Efficient.** Convenient, fast, & secure conversions. • **Simple**. Easily understood by the average consumer. • **Stable**. Government backed ensures store of value.
Crypto-Collateralized Stablecoins	Asset Collateralized	• **Decentralization**. Benefits of Cryptocurrency. • **Efficient**. Convenient, fast, and secure conversions. • **Leveraged**. Easily used in leverage trading related to the over-collateralization. • **Transparent**. Transactions recorded on a public ledger
Metal-Collateralized Stablecoins	Asset Collateralized	• **Assets.** Backed by real-world assets or a tangible commodity. • **Efficient.** Convenient, fast, and secure conversions. • **Liquidity**. The tokenization of commodities brings greater liquidity to the market and facilitates price discovery. • **Simple**. Easily understood by the average consumer. • **Stable**. Assets ensure prices won't fluctuate wildly.
Seigniorage Supply (Algorithmic) Stablecoins	Non-Collateralized	• **Absence of Collateral**. No tangible asset required. • **Autonomous**. Not influenced by outside markets. • **Decentralized**. Benefits of cryptocurrency. • **Stable.** Automatic value adjustments based on the market. • **Transparent**. Transactions recorded on public blockchain.
Hybrid Stablecoin Models	Mixed	• **Mixed**. Has all the advantages of each category. • **Diverse**. Meets the needs of a variety of users.

Chapter 7

Complete Stablecoin Guide
Fiat-Collateralized Stablecoins

Definition
The most basic type of Stablecoin is a Fiat-Collateralized Stablecoin. This token is a 1 : 1 ratio cryptocurrency backed by fiat like the US dollar or the Japanese yen. Stablecoins are created when fiat is held by a centralized issuer and destroyed when the fiat asset is received. This digital currency system makes transactions safe, fast, and secure, making it useful as a medium of exchange as well as a store of value.

Advantages
- **Efficient:** Some benefits of Cryptocurrency: Convenient, fast and secure conversions.

- **Simple**: Fiat-backed structure has some universally familiar features.

- **Stable**: Government backed fiat currencies ensure underlying prices won't wildly fluctuate.

Disadvantages
- **Centralized**. Centralized systems are prone to certain vulnerabilities (Ie. single point of failure, bankruptcy of the central entity, and moral hazards) Using a centralised structure negates a key principle of cryptocurrency: decentralization.

- **Requires Trust**. Requires trust in a third party to hold sufficient fiat collateral. The central entity needs to be trusted for the system to function optimally; this idea goes against the principle of cryptocurrencies, which are traditionally *trustless mediums* of exchange.

- **External Audits Needed.** For transparency of funds accounts must be verified. Auditing is needed to make sure the appropriate amount of collateral is being held, which can be a tedious and expensive process.

- **Regulations.** Fiat-involving processes require greater oversight and more regulations. This can complicate and possibly compromise the efficiency of the cryptocurrency adoption process.

- **Old Technology.** Relies on traditional fiat currency payment systems, which are slower and more expensive.

Example

A Fiat-Collateralized Stablecoin issuer accepts a deposit in fiat. The receiver is issued one unit of Stablecoin for every dollar obtained. The 1 : 1 ratio holds. The digital currency is effectively an IOU for its underlying asset. If one decides to liquidate their Stablecoin tokens, the coin issuer transfers fiat and “burns” the Stablecoins once the asset is dispensed.

Criticisms

Asset-backed Stablecoins are sometimes criticized for their inherently centralized nature. If one company owns a large amount of a desired asset, the company can control the Stablecoin’s price fluctuations and policies.

This model becomes a risk if the coin cannot be claimed for fiat or if there’s low confidence the asset doesn’t fully lie within the central entity. It also must operate on a fractional reserve system. Fiat-Collateralized Stablecoins are also prone to destabilization from external factors, like geopolitics and new regulations.

Problem Examples

Tether (USDT), the first fractional reserved Stablecoin has long been the subject of accusations. Some have suggested Tether has been used to increase the price of Bitcoin.

Tether Limited and Bitfinex have been accused of not holding sufficient USD reserves, they were both under investigation regarding the reserve funds. Tether assets have a $2B+ market capitalization, which means Tether Limited, in theory, should have an equal amount of fiat in one or more of its accounts.

Legal documents showed that the Stablecoin was only backed 74% by the US Dollar. Hence, there is not enough currency in the reserve fund to ensure all token holders can convert their USDT to USD.

Tether terms were also adjusted, stating that token holders are not guaranteed a one to one conversion rate.

Digital asset exchange Digiflex announced it is favoring Trust Token's TrueUSD over Tether and has since replaced USDT with TUSD.

Future Fiat Backed Stablecoins:
The Digital Asset Exchange Stablecoin

Global financial service providers in the digital asset industry, like OKCoin (USDK), Huobi Group (HUSD), and Binance (BUSD), have all launched stablecoins. The coins are tradeable at their parent company's asset exchanges as well as other platforms that offer an array of other Stablecoins.

USDK, HUSD, and BUSD are all ERC20 tokens issued on the Ethereum blockchain. They are all pegged 1 : 1 to the US Dollar.

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Complete Stablecoin Guide
Fiat-Collateralized Stablecoins

Stablecoin	Issued By	Released	Features
AAA Reserve	Arc Fiduciary ltd	2017	Backed by fiat, gilts, and AAA-rated credit investments Focuses on large amounts of fiat (>$25k)
AUDRamp (AUDR)	OnRamp Technologies	2018	Backed by and pegged to AUD
Circle (USDC)	Circle	2018	Backed and pegged to USD
Gemini Dollar (GUSD)	Gemini	2018	Backed and pegged to USD. Publically available monthly audit by accounting firm.
GIVE Coin (GIV)	GIVE Nation	2020 (TBD)	A nonprofit business with a Stablecoin designed for children 5-18 backed by multiple fiats
Globcoin (GLX)	RCS	TBD	Backed by 15 fiats currencies
JP Morgan (JPM)	J.P. Morgan Chase	2020	Backed and pegged to USD.
Libra Coin	Facebook	2020 (TBD)	Backed by 50% United States dollar, 18% Euro, 14% Japanese yen, 11% Pound sterling and 7% Singapore dollar.
Monerium	Monerium	(TBD)	Backed by USD, EUR & other fiat currencies
NOS (Nollar)	NOS	TBD	Backed by EUR Pegged to USD and other fiat currencies
Paxos Standard (PAX)	Paxos Trust Co	2018	Backed and pegged to USD
Stably Inc, (StableUSD)	Stably Blockchain Labs	TBD	Backed and pegged to USD Reserved backed with a supply adjusted via open

			market operations
Stasis (EURS)	Stasis Foundation	2018	Backed and pegged to EUR EIP-20 token with verification streams supported by STASIS
StrongholdUSD	Stronghold	2018	Pegged to USD Backed by multiple fiat currencies Based on Stellar network FDIC guaranteed
Tether (USDT)	Tether	2014	Backed and pegged to USD Built on Omni Market Leader Formeraly; RealCoin
TrustToken (TrueUSD)	TrueCoin LLC	2018	Backed and pegged to USD Built on Ethereum Forces on transparency
USD Coin (USDC)	Circle & CENTRE	2018	Fiat tokens (USDC) for crypto payments and trading Uses CENTRE framework for Stablecoin project involving real-world asset reserves Issued by CENTRE network members Audited by CENTRE
Rockz		2018	Backed by CHF
White Standard	The White Company	2018	Pegged to USD

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Complete Stablecoin Guide

Fiat-Collateralized Stablecoins

J.P. Morgan Chase's Beta Users Show Crypto Success

J.P. Morgan Chase connected 220 banks to it's Quorum-based Interbank Information Network[34] and completed integration with Microsoft Azure and the National Bank of Canada with the intention of streamlining an array of financial processes.

These include, but are not limited to:

- settlement
- origination
- interest rate payments

The results were exciting for JPM Coin awaiters. Real-time settlements have been integrated, indicating they've successfully launched a digital currency.[35]

This was surprising to many in the field of financial technology.

Jamie Dimon and Bitcoin

J.P. Morgan's official website states: **"***We have always believed in the potential of blockchain technology and we are supportive of cryptocurrencies...***"**

Some would disagree.

Jamie Dimon is the Chairman and CEO of J.P. Morgan Chase, the largest bank in America. He has also served on the board of directors of the Federal Reserve Bank in New York. It's safe to assume Dimon knows a thing or two about money, so it was no shock when his negative comments on Bitcoin made headlines.

[34] https://www.coindesk.com/jpmorgan-expanding-blockchain-project-with-220-banks-to-include-payments
[35]https://www.coindesk.com/jpmorgan-adds-new-privacy-features-to-its-ethereum-based-quorum-blockchain

During the 'Delivering Alpha' conference in 2018, Jamie Dimon laughingly announced, "*My daughter bought some bitcoin and it went up and she thinks she's a genius now*." This came in the wake of Dimon's many critical remarks about Bitcoin.

Looking back we heard him call Bitcoin a "*terrible store of value*" as early as 2014.

A year later, in 2015 he said "*Bitcoin will not survive*".

September 2017 he very publicly dismissed Bitcoin as a "*fraud*" and threatened to fire any staff members who used it. Dimon later said he regretted making this statement.[36]

Not a Fan of Bitcoin, Loves Blockchain

Jamie Dimon never had anything but praise for Bitcoin's underlying technology, evidenced not only by his words, but also his actions.

J.P. Morgan Chase had been experimenting with blockchain technology for several years. With the plans of regulation, J.P. Morgan plans to evolve with changing financial trends and continues to be one of the largest cash cows in the world with $2.5 trillion worth of assets.[37]

Their site proudly proclaims: "*J.P. Morgan this month became the first U.S. bank to create and successfully test a digital coin representing a fiat currency. The JPM Coin is based on blockchain-based technology enabling the instantaneous transfer of payments between institutional clients. We sat down with Umar Farooq, head of Digital Treasury Services and Blockchain, to find out more about the announcement and what it means for the future of payments.*"[38]

Despite Jamie Damon's disdain for Bitcoin, JPM Coin tries to imitate the technology for trust. JPM Coin will be a fiat-collateralized Stablecoin pegged to the US Dollar. This, correctly stated, makes J.P. Morgan Chase the first major US bank to introduce its own digital coin.[39]

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[36] https://www.marketwatch.com/story/jamie-dimon-i-dont-really-give-a-shit-about-bitcoin-2018-10-31
[37] https://www.fool.com/investing/2016/08/24/jpmorgan-chase-is-10-times-bigger-than-you-think-i.aspx
[38] https://www.jpmorgan.com/global/news/digital-coin-payments
[39]https://www.cnbc.com/2019/02/13/jp-morgan-is-rolling-out-the-first-us-bank-backed-cryptocurrency-to-transform-payments--.html

CoinDesk Exclusive on Zether & Quorum

On May 28th 2019, J.P. Morgan Chase announced its "*blockchain team [had] developed a privacy feature for ethereum-based blockchains, obscuring not only how much money is being sent but who is sending it.*"

"*Revealed exclusively to CoinDesk, JPMorgan has built an extension to the Zether*[40] *protocol, a fully decentralized, cryptographic protocol for confidential payments, compatible with Ethereum and other smart contract platforms. It is designed to give transactions another layer of anonymity. The New York-based financial institution will open-source the extension Tuesday, and is likely to use it with Quorum,*[41] *the bank's homegrown, private version of ethereum.*" [42]

JPM's head of Quorum and crypto-assets strategy, Oli Harris, explained what the extension does to CoinDesk: **"***In the basic Zether, the account balances and the transfer accounts are concealed but the participants' identities are not. So we have solved that. In our implementation, we provide a proof protocol for the anonymous extension in which the sender may hide herself and the transaction's recipients in a larger group of parties.*"

CoinDesk's exclusive interview with Harris pointed out; "*Zether's confidential payments architecture incorporates an account-based approach*[43] *employed by ethereum, as opposed to the unspent transaction output, or UTXO-based approach, which the bitcoin client uses. The UTXO is also a feature of the privacy-oriented cryptocurrency zcash, which the original ZKP component of Quorum was based on. In this way, the extension could benefit not only users of Quorum, but also enterprises building on top of other Ethereum variants — or, conceivably, businesses leveraging the public Ethereum chain.*"[44]

Quote Source from CoinDesk, "*When we think about the community building on top of Quorum," said Harris, "if anyone is looking to get an efficient trustless mechanism for trustless and anonymous payments in a consortium then that's when it's relevant. That's why we wanted to open-source it back to the community so anyone can build*

[40] https://crypto.stanford.edu/~buenz/papers/zether.pdf
[41] http://goquorum.com/
[42]https://www.coindesk.com/jpmorgan-adds-new-privacy-features-to-its-ethereum-based-quorum-blockchain
[43] https://medium.com/@sunflora98/utxo-vs-account-balance-model-5e6470f4e0cf
[44]https://www.coindesk.com/jpmorgan-adds-new-privacy-features-to-its-ethereum-based-quorum-blockchain

on it further and continue enhancing it and potentially put it into their use cases as needed."[45]

Harris said the extra dose of cryptography to obfuscate participant identities didn't appear to slow down Zether, "*The performance is quite good; we had done multiple iterations to improve it and we are doing the verification in Solidity smart contracts. We'll be including in our report the performance measurements for proving and verification.*"

Although, JPM Coin is making headlines, which was likely, being backed by one of the largest banks in the United States, it was not the first Stablecoin launched by an American bank. The first was actually Signet, launched by Signature Bank on December 4, 2018, two months before J.P. Morgan Chase's media release.[46]

[45]https://www.coindesk.com/jpmorgan-adds-new-privacy-features-to-its-ethereum-based-quorum-blockchain

[46] https://www.signatureny.com/business/signet

Chapter 7

Complete Stablecoin Guide
Crypto- Collateralized Stablecoins

Definition
Crypto-Collateralized Stablecoins are tokens backed by other cryptocurrencies. Typically they are backed by a mix of cryptocurrencies. This allows for better risk distribution: the volatility risks for a single cryptocurrency is much higher than a basket. They very much resemble mutual funds or EFTs depending on risk management, respectively.

Crypto-Collateralized coins are often over-collateralized to withstand price fluctuations of underlying cryptocurrencies. The most common form of crypto supported Stablecoins require users to stake (vault) a certain amount of digital currencies according to the specifications of a smart contract, which will result in a fixed ratio of Stablecoins.

Advantages
- **Decentralization**. Trustless, transparent, and secure structure.
- **Efficient**. Convenient and fast conversions occurring on a blockchain.
- **Leverage**. Easily used in leverage trading related to the over-collateralization.
- **Transparent**. All transactions are recorded on a public blockchain for accountability.

Disadvantages
- **Complex**. Elements exist that can obfuscate the minting process.
- **Excess Collateral**. Requires an extra form of collateral to secure.
- **Risk of Asset Collateralising.** Possible instantaneous liquidation if value falls below a certain threshold.

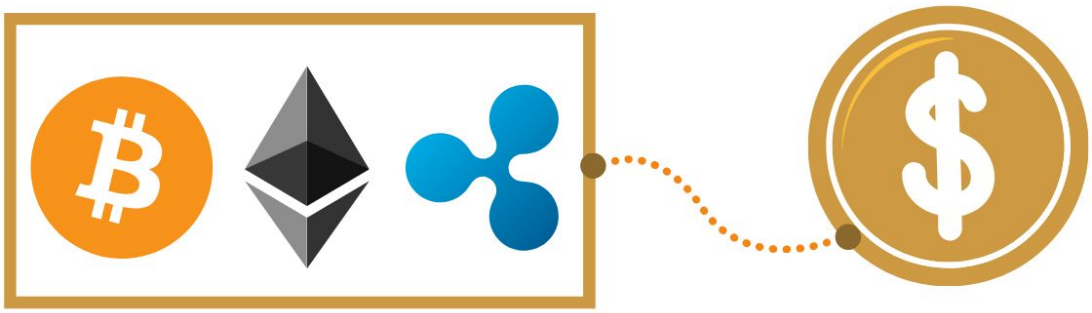
- **Volatile.** Cryptocurrency fluctuates. Being backed by multiple cryptos makes selecting the right coins for maximal price stability can be challenging.

Example

This approach is on-chain, trustless insurance. The system uses the Stablecoin when assets are pledged as collateral on the network. The token maintains stability through overcollaterization, market efficiencies, profit motives, complimentary incentives, as well as fallback procedures such as global settlement.

Criticisms

Venture capitalist Haseeb Qureshi says a weakness of crypto-backed Stablecoins is that they're designed to automatically revert to the underlying cryptocurrency if the crypto price drops far enough. "*This could be a dealbreaker for exchanges*," Qureshi says, "*in the case of a market crash, they would have to deal with stablecoin balances and trading pairs suddenly mutating into the underlying crypto assets.*"



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Complete Stablecoin Guide

Crypto- CollateralizedStablecoins

Stablecoin	Issued By	Released	Features
Alchemint (SDUSD)	Alchemint	2018	Backed by a pool of assets; fiat & cryptos Built on top of NEO
Augmint (A-EUR)	Augmint	TBD	Pegged to EUR & backed by ETH Targeted to fiat replication by mechanisms using stability reserves & smart contracts
Bitshares (BitUSD)	Bitshares	2014	Backed by BTS & multiple assets Pegged to USD Stablecoins (Smartcoins; BitUSD, BitCNY) using derivative instruments First official Stablecoin
E-USD (EUSD)	Haven	2018	Backed by fees Pegged to USD On Ethereum Blockchain Distributed collateral pool Issuance mechanisms
MakerDAO (DAI)	MakerDAO	2017	Goal is to be backed by multiple assets Currently backed by ETH Pegged to USD Maintained by MKR users Assimilable to derivatives instruments
Bridgecoin (BRC)	Sweetbridge	TBD	Backed by fiat, crypto, IPs, physical assets On-chain collateral-backed Stablecoins
Staticoin	Staticoin	TBD	Based on two tokens: Staticoin & Riskcoin Based on Ethereum

Chapter 7

Complete Stablecoin Guide
Seigniorage (Algorithmic) Stablecoins

Definition

Seigniorage Supply or Algorithmic Stablecoins are the only noted type of Non-Collateralized Stablecoin. They're an algorithmically governed approach to expanding and contracting a cryptocurrency's money supply.

Modeled after the way central banks manage money supplies, Algorithmic Stablecoins use algorithms to automatically adjust the number of Stablecoins in circulation to discourage price fluctuations.

"*Special thanks to Robert Sams for the development of Seigniorage Shares and insights regarding how to correctly value volatile coins in multi-currency systems.*" Vitalik Buterin states in his November 11, 2014 publication "The Search for a Stable Cryptocurrency."

Robert Sams published the Algorithmic Stablecoin concept earlier that year.

Crypto-enthusiasts and centralized companies created White Papers shortly thereafter.

Advantages

- **Absence of Collateral**. No tangible asset required. This Stablecoin is created or destroyed by an algorithm, reducing or eliminating the potential of human error.

- **Autonomous**. Cryptocurrencies are not as easily influenced by outside markets.

- **Decentralized**. Trustless, onchain ledgers provide a more stable digital currency.

- **Stable.** Theoretically protected against crypto volatility related to automatic value adjustments based on market supply/demand.

- **Supported.** Many financial technology experts support Algorithmic Stablecoins.

Disadvantages

- **Complex**. The rule-based system is integrated with complex logic, making it difficult for some to understand.

- **New technology.** Somewhat untested methodology based on a novel concept.

- **Regulations.** Real-world bonds are considered securities. Algorithmic Stablecoin Bonds run the risk of also being classified as such.

Example

The Seigniorage Supply or Algorithmic Stablecoins method uses Smart Contracts that automatically expand and contract the supply of Non-Collateralized currency using algorithms to maintain value.

Let's say a Stablecoin is one dollar per unit.

The price drops to $0.80, indicating supply is outstripping demand.

The algorithm uses seigniorage to buy the Stablecoin, thereby decreasing supply and pushing price back to $1.

In the event that the price remains below $1 and there are no profits left to purchase excess supply, seigniorage shares are then issued. These are essentially "bonds" used to raise funds for network users.

Bonds promise seigniorage profits to buyers. Users are essentially investing in the growth of an Algorithmic Stablecoins supply.

When Stablecoin trades above $1, the algorithm issues additional tokens to increase supply until price returns to $1.

Profits collected are termed "seigniorage."

Criticisms

The Swiss Finance Institute's Didier Sornette and Richard Senner released a publication exploring the recent use of Quantitative Easing (QE) to restore the US economy by flooding the market with new bonds. They conclude "*QE was not overly effective because it did not channel new liquidity to ordinary people, who would have a high propensity to consume.*"

Preston Byrne closes his critique of a recently failed Algorithmic Stablecoin, "*An investment scheme backed by introducing new investors... and not backed by income-generating assets can be called a number of things. I leave it to you, dear reader, to decide what name you will choose to give to this one.*"

Patrick Devereaux, CEO of Aperum responds to Byrne's opinion, "*I agree with this. If there isn't a financial incentive to the risk, people are not likely to buy the bonds. The only way for there to be a manageable level of income to cover risk costs, is if the Stable-token seeks profits. If it is seeking profits, it is not a Stablecoin.*"

"*If executed well, this type of stablecoin will unlock rich possibilities for crypto holders since it will be decentralized, efficient, and free of counterparty risk. The approach is promising, albeit in need of testing,*"[47] according to Nat Wittayatanaseth.

It's frequently noted that Seigniorage Supply (Algorithmic) Stablecoins could potentially collapse during a Black Swan event, such as war or pandemic, but this is no different from other assets.

A successful Non-Collateralized stablecoin could radically change financial technology and consumer trade. However, an unsuccessful Algorithmic Stablecoin can be catastrophic and dramatically impact cryptocurrency.

[47] https://link.medium.com/BX8yQZtBYU

Complete Stablecoin Guide

Seigniorage (Algorithmic) Stablecoins

Stablecoin	Issued By	Released	Features
Basis	Basis	TBD	Prices kept stable by algorithmically adjusting supply Smart contracts acting as a central bank to inflate & deflate prices by issuing bonds
BitBay (BAY)	BitBay Official	2015	Pegged using “liquid’ & ‘frozen” tokens & decentralized governance mechanisms
Carbon (CarbonUSD)	Carbon	TBD	Coin supply algorithmically adjusted based on demand. Pegged to USD Powered by Hedera Hashgraph Monitored by an elastic supply through market participants
µFragments	Fragments	2018	Pegged to USD. Supply inflates & deflates in response to demand Auditable reserve Monetary supply policy
Kowala (kCoin-KUSD)	Kowala Tech	TBD	Pegged to USD. Supply expands & contracts depending on market conditions Stable against fiats, cryptos & other assets Maintained with algorithms & market-based oracles
NuBits (USNBT)	NuBits	2014	Stabilized by issuance mechanisms & custodial grants No vendor fees. No customer chargebacks.
SteemDollar (SBD)	Steemit	2016	Stabilized on Steem blockchain with 1:1 USD Based on a convertible notes system
Topl (Polys)	Topl Foundation	TBD	Backed by a basket of assets Stabilized by Topl Foundation; issuer and redeemer of tokens

Chapter 7

Complete Stablecoin Guide
Commodity-Collateralized Stablecoins

Definition

Commodity-Collateralized Stablecoins are cryptocurrency backed by commodities, or goods.

Commodities are considered fungible assets with interchangeable features for convenient trading and transactions.

Advantages

- **Assets.** Commodity-Collateralized Stablecoin holders hold cryptocurrency backed by real-world assets or tangible commodities.

- **Efficient.** Convenient, fast, and secure conversions.

- **Liquidity**. The tokenization of commodities brings greater availability of liquid assets to a market and facilitates better price discovery.

- **Simple**. Commodity structure is easily understood by average consumers.

- **Stable**. Most Commodity-Collateralized Stablecoins are backed by commodities with long term stable market prices, ensuring cryptocurrency prices won't fluctuate wildly.

- **Reduced Costs.** Commodity-Collateralized Stablcoincoins lower carrying costs of holding tangible assets. This is important when considering the logistics of delivering and storing goods. Transporting physical goods like precious metals can be costly, time consuming, and ecologically irresponsible.

Disadvantages

- **Centralized**. Centralized systems are prone to various vulnerabilities and risks (single point of failure, bankruptcy of the central entity, etc.). Moreover, a centralized structure negates one of the key features of cryptocurrency.

- **Requires Trust**. Requires trust in a third party to hold enough fiat collateral.

- **External Audits Needed.** For transparency, accounts must be verified. Auditing is necessary to make sure the appropriate amount of collateral is being held.

Example

A commodities-backed Stablecoin represents a specific amount of a commodity.

For example, 1 Stablecoin Token could be pegged to 1 gram of Gold.

The physical asset should be stored in a trusted third party's vault. Whenever someone invests in a Commodity-Collateralized Stablecoin, the network mints a new token.

Conversely, when the Stablecoin is liquidated the network burns the token and collateral is received.

Criticisms

Commodity-Collateralized Stablecoins have value because they are digital representations of a different asset, therefore, some would say, it is an inherently centralized design. A mix of enthusiasts believe cryptocurrency should always be trustless, in other words, beholden to no external authority. Requiring a third party and audits is time intensive, costly, and leaves room for error. Intense regulation is needed to maintain transparency, which is why so many fail.

Fiat before 1970 was generally backed by gold or silver. Precious metals are viewed as reliable stores of value and largely recession-proof. Investors will still invest in gold and other precious metals when every other market is bearish, or struggling.

CEO of Anthem Vault, Anthem Blanchard, was asked for a quote on Commodity-Collateralized Stablecoins for this text, he said "*Gold is a recognized store of value ingrained in our DNA. Bitcoin has freed gold to become a currency again by creating a better way of accounting. We utilize public protocols, including Bitcoin, to ensure the most transparency in the history of gold currency*." Blanchard is also the CEO and founder of Anthem Gold, a Commodity-Collateralized Stablecoin.[48]

[48] https://anthemgold.com/

Complete Stablecoin Guide

Commodity-Collateralized Stablecoins

Stablecoin	Issued By	Released	Features
AgAu	Tarco International	TBD	AgAu Gold token; 1 gram gold equals LBMA gold AgAu Silver token: 1 gram silver equals LBMA silver
Airgead	Airgead	TBD	Token lets users merge the value of different precious metals into one coin. Value of a token is based on the type and weight of precious metal assets backing it up.
Anthem Gold (AGLD)	Anthem Vault Inc.	TBD	Backed by one gram of tangible gold. Fully insured. Vaulted securely with a nonbank entity.
AssetBase	AssetBase Foundation	TBD	Five different cryptocurrencies. Pegged to different precious metals (gold, platinum, silver, palladium, & rhodium). Separate coin for each metal.
AurumCoin (AU)	AurumCoin – One World One Coin	2014	Backed by 0.75 gram of tangible gold. The token will always be worth 1 gram of actual gold. Vaulted in London, Zurich, New York, Singapore, Toronto, & Hong Kong.
AurusGold (AWG)	AURUS	2018	Software offering established gold traders tokenization service. Token 1:1 gram of 99.99% LBMA approved gold. Insurance & storage is paid for fairly via the currency's transaction fees. Gold can be withdrawn at any time.
BullionCoin (XAAU)	Digital Gold Ltd	TBD	Backed by gold & silver. There are two forms of BullionCoin: XAAU which represents 1 gram of 999.9% gold XAAG which represents 50 grams of 99.5% silver Users have a debit MasterCard with BullionCoin Can be used anywhere MasterCard purchases are allowed

Currensee (CUR)	Currensee	TBD	Backed & pegged by gold CUR cryptocurrency price 1:1 gram of gold Built on own blockchain Relies on principles of Ethereum's blockchain
Cyronium (CYRO)	Cyronium	2018	1:1:20 CYRO token is guaranteed by one Cyronium coin 1:1 Cyronium coin is backed by 20 grams of LBMA gold at 1:20 ratio The company offers users a gold coin exchange with the option of replacing their CYRO tokens with physical coins. If one chooses physical coins, the corresponding CYRO tokens will be destroyed by a smart contract to prevent duplication. The physical coin will be shipped along with the ownership certificate. Gold is vaulted in Singapore.
Darico (DRC)	Darico AG	2018	Each token is backed by 35% gold, 55% Bitcoin, & 10% Ethereum. Users can trade tokens & other cryptocurrencies at Darico Exchange. Gold is secured in custodial vaults. Users can order a Darico debit card.
Digix Gold Token (DGX)	Digix Global	2016	Backed by gold. First crowdsale on Ethereum in 2016 raised 465k ETH DigixGlobal has two Ethereum based tokens: Digix Gold Token (DGX) which is pegged to the price of 1 gram of 99.99% LMBA gold securely stored in Safehouse Vaults. (Singapore) Digix DAO Tokens (DGD) which are used to reward users quarterly on the basis of the total DGX transaction fees collected.
DinarDirham (DNC)	DinarDirham	2017	DinarDirham is a decentralized gold trading platform. DinarCoin, Gold Smart Contract (GSC), & DinarDirham physical gold. On Ethereum's blockchain.

			DinarCoin is equal to a gold spot contract (XAU) offered by the company's forex liquidity provider. Gold Smart Contract (GSC) are Gold in 1 gram, 100 grams, or 1kg Silver in 100Oz, & 1Kg. Can invest on DinarDirham's platform or partnering providers. DinarDirham Physical Gold can be bought at gold's spot price via DinarDirham's platform.
Doradocoin (Dor)	Doradocoin	2017	Backed by gold ERC-20 token Launched to support a gold mining company in Chile.
Egold (EGD)	Egold	2018	Pegged to physical gold. Egold has its own blockchain
Flashmoni (OZG OZT)	Flashmoni	2018	Flashmoni has two gold-backed cryptocurrencies: OZG is a token pegged to 24 karat gold which is vaulted in Dubai's DMCC Free Zone and in Singapore. OZG token equals 0.065 gram of gold. OZT is another gold pegged token whose value is equal to 1/20th of that of OZG. Flashmoni offers payment solutions & smart contract based advertising solutions.
Gold Bits Coin (GBC)	Gold Bits Coin	2018	15% backed by physical gold. Ethereum based ERC-20 token. Users who make purchases via GBC receive discounts from partnering merchants.
GoldCrypto (AUX)	GoldCrypto	2018	Backed by gold. 750 tokens are backed by one oz of gold
Goldmint (MNTP)	Godmint	2018	GoldMint (MNTP) is a coin based on a separate blockchain Relies on the Graphene technology. Pegged to gold and/or exchange traded funds (ETFs).

GoldMineCoin (GMC)	GoldMine	2017	Backed by a physical gold mine. GMC coins are backed by gold vaulted in the Magadan region in the Russian Federation.
G Coin	GCoin	TBD	Backed by one gram of conflict-free gold Stored in an approved vault. Blockchain technology used to track gold from mine to vault before being tokenized into G Coins.
HelloGold (GOLDX)	HelloGold Sdn Bhd	2017	Backed by gold. 1 token to 1 gram of gold. Secured in a Singapore based partnering vault. Currency is compliant with Islamic Shari'a standardized by the World Gold Council.
IC3 Cubes (IC3)	Ic3 Cubes	2018	IC3 Cubes (IC3) is a cryptocurrency backed by 100% Canadian gold. Site is currently offline; the project's fate is unknown.
Karatcoin (KCG)	Karat Lab	2018	Pegged to 1 gram of 99.99% LBMA gold Securely stored in Safehouse Vaults. Karatcoin's platform also offers trading, gold certificates, and easy exchange of Karatcoin tokens via gold cards.
OneGram (OGC)	The OneGram Project	2018	Backed by 1 gram of physical gold Securely stored in vaults located in a high security compound at Dubai's airport. Compliant with Islamic Shari'a. The maximum number of issued OGC coins is 12,400,786, but the unsold coins will be destroyed by a smart contract after the ICO concludes.
Orocrypt (OCG)	Orocrypt Inc	2018	Backed by 30 grams of LBMA gold Securely vaulted in Switzerland, Liechtenstein, and The Cayman Islands
OZcoinGold (OzGLD)	Oz Gold Inc	2017	Backed by 1 ounce of 24 karat gold 1/3 is stored in Perth Mint in Australia 2/3 held by Ozcoin Inc. Ethereyn based

			Ozcoin Inc. claims it is backed by 100,000 ounces of pure gold owned by the company.
Pecunio (PGX)	Pecunio	2018	Pecunio (PGX) is a gold-backed cryptocurrency and crypto exchange. PGX coin is backed by 1 gram of 999.9% LBMA gold.
Puregold (PGT & PGG)	Puregold Access	2018	Puregold is a payment gateway based on a gold-backed cryptocurrency. The company offers two coins: PGT, used for transactions PGG, cryptographic token backed by physical gold. PGG token is equal to the cost of 1 gram of gold plus a 5% commission for fiat. The difference between the price of PGG & price of gold will be no greater than 4%.
Reales (RLS)	Reales Inc	2018	Backed by silver, gold, and cryptocurrencies. RLS token is backed by physical gold (10%), physical silver (35%), Bitcoin (20%), a mix of ICO coins and Altcoins (20%). The remaining 15% is backed by the company's budget and the platform's operational cost.
Royal Mint Gold (RMG)	The Royal Mint Limited	2018	Backed by gold reserves in the UK-based Royal Mint vault. Prova is the open source blockchain used for RMG's transactions Code was developed by BitGo.
Sudan Gold Coin (SGC)	Netarc AG	2017	Backed by a gold mining business in the Northern State of Sudan. Pegged to the price of 0.05 gram of gold. 100% of the Sudanese mining company is controlled by the Dubai SG Mining Co.
The Midas Touch Gold (TMTG)	Digital Global Enterprise (DGE) Ltd.	2018	The Midas Touch Gold is comprised of three components: 1. TMTG coin represents a means of purchasing cryptocurrencies on (DGE) 2. The cryptocurrency exchange, Digital Gold Exchange (DGE). 3. MDG token, a gold-backed cryptocurrency. Pegged to the value of 1 gram of gold.

Kingsilver (KSR)	Themisia	TBA	Dynamic-supply token kept stable by Themisia Token Precious metals backed cryptocurrencies.
USDVault (USDV)	vault	2018	Pegged to USD. USDV is worth $1. USDV is fully backed by gold secured in Swiss based vaults managed by third party facilities.
X8Currency (x8C)	X8Currency	2018	Backed by 8 fiat currencies and gold reserves Ethereum' based Gold reserves are stored in Zug, Switzerland.
Xaurum (XAUR)	Auresco Institute	2017	Backed by gold XAUR coin equals 1 gram of 99.99% pure gold. Users can exchange XAUR for real physical gold, deliverable to any destination. The total amount of gold that backs the coin is referred to as the Xaurum CommonWealth.
XGold Coin (XGC)	XGold	2017	XGold Coin offers two forms of gold-backed cryptocurrency: XGC equals 1 gram of LBMA gold xBit (XBC) equals the price of 8 milligrams of LBMA gold. xGold has investments in gold mines around the world.
ZenGold (ZGC)	ZenGold	2017	Backed by 1 gram of 99.99% gold Stored in Shanghai Gold Exchange Vault. Developed on Metaverse Blockchain Holders are able to use gold as an effective payment mechanism and credit system while benefiting from the transactional functionalities of Blockchain technology

Chapter 7

Complete Stablecoin Guide
Hybrid Stablecoin Models

Definition
A Hybrid Stablecoin combines two or more of the aforementioned crypto categories (Fiat, Crypto, or Commodity-Collateralized and Algorithmic Stablecoin Model) applied to one token.

Advantages
- **Mixed**. Has all the advantages of each category.

- **Diverse**. Meets a lot of needs for different users.

Disadvantages
- **Difficult to Understand**. Can be confusing because it crosses different categories of backed assets

- **Regulations.** Laws and regulations can limit these projects.

Example
Sam Trautwein explains the concept in an article about Carbon's release: "*While algorithmically backed stablecoins are superior in terms of the lack of centralized fail points, on the consumer side they are initially inferior to fiat-backed Stablecoins. On day 0 a redeemable fiat-backed stablecoin is much more trusted than an algorithmic non-redeemable stablecoin.*

While some groups have considered essentially buying their way out of this by distributing profits to the users, most mechanisms for distributing the economic gains stemming from an uncollateralized system will motivate both economically suboptimal and speculative behavior that will ultimately destabilize the system. If profits are distributed to wallets or token holders demand will be artificially inflated, leading to a pattern of boom and bust cycles.

Maintaining accurate metrics is crucial to most active reserve management approaches and creating systems that motivate the creation of excess volume, demand, or wallets, which will both increase system volatility but also skew the decision making process of the operators. As many proposed systems rely on on-chain

governance, this is a particularly salient risk. Combining the two presents the best route forward."

Criticisms

Sam Kazemian, Co-Founder and President of Everipedia thinks, "*Stablecoins, as an asset class, are the next big thing in crypto and will lead to a new bull market in the next 6 — 18 months.*" Sam concluded that a Hybrid Stablecoin "*was the most promising.*" Kazemian joined Mahbod Moghadam and Stephen Moore to announced the launch of FRAX.

Chapter 7

Complete Stablecoin Guide

Hybrid Stablecoin Models

Stablecoin	Issued By	Released	Features
Aurora (Boreal)	Aurora DAO	2018	Backed by a combination of ether reserves, debt from loans, and DAPP endorsement
Candy	Mobicom	TDB	The Bank of Mongolia has granted an “electronic cash” license to Mobicom, with crypto being 1:1 with Tugrik (fiat). Mongolian mobile phone users can use Candy to pay bills, shop online, transfer funds, and take out micro-loans.
Celo	celo.org	TBD	Pegged to fiat Backed by a diversified, overcollateralized, and auditable crypto-asset reserve
Corion	Corion	TBD	Price maintained by an automated inflation/deflation control
Jibrel (jUSD, jEUR)	Jibrel Network	TBD	Backed by a wide range of assets built on Ethereum
FRAX	FRAX	TBD	Backed by fiat and data
LBXPeg (LBX)	London Block Exchange	2018	Backed by GBP Stored in an auditable UK bank account ERC-621 token
PHI (PHI)	definite.org	TBD	Backed by loan collateral maintained algorithmically
Reserve	reserve.org	TBD	Tokens stabilized by crypto-assets locked in a small contract fully decentralized

Saga (SGA)	Saga Foundation	TBD	Pegged to the International Monetary Fund's special drawing rights (SDR), which is in turn tied to an underlying basket of currencies
Stableunit	Stableunit	2019	Tokens price is maintained with multiple stabilization mechanisms involving a DAO, crypto reserves applying various monetary systems
SwissRealCoin	Swiss RealCoin	2018	Backed by a portfolio of Swiss commercial real estate
Unum		TBD	Backed by multiple cryptocurrencies and simple reserve mechanisms
USDVault	Vault	2018	Backed by gold Pegged to USD
TerraMoney	Terraform Labs	TBD	Pegged to a basket of currencies (SDR) and assets with its value algorithmically stabilized through decentralized elastic supply mechanisms Price stability ensured by algorithmically expanding & contracting supply. Backed by Luna, Terra's own asset
Tiberius Coin (TCX)	Tiberius Group AG	2018	Backed by a combination of 7 precious metals: gold, platinum, tin, nickel, cobalt, aluminium, and copper along with electric vehicle metals. Tradable on the Estonia-based LATOKEN exchange.

FRAX

Using Presidents, Economists and Existing Blockchain

> Stablecoins have seen significant growth in transaction volumes since the beginning of 2020. Stablecoins saw record transaction volumes of over $90 billion in 2020's first quarter.

Stephen Moore is known for being an outspoken economist and former campaign adviser to Donald Trump. On March 15th, 2019 Trump nominated Moore to join the Federal Reserve. Moore withdrew consideration on May 2, not stating a reason. After their plans to infiltrate the Federal Reserve failed, they decided to take matters into their own hands and start their own currency.

Leaders Desire Successful Hybrid Stablecoin

Many say Bitcoin is the answer to the double spending problem and inflation. President Trump and Stephen Moore disagree. The American President and the former Wall Street Journal editorial board member want to join forces with Thought Leaders in the crypto world and release their proposed solution to today's economic crisis. On November 21st, 2019 Stephen Moore announced he will manage a digital Stablecoin, called Frax.

In an interview with Fortune, Moore said his libertarian views led him to support cryptocurrency, which he believes is an important alternative to state-backed money. "*I've followed monetary policy for 30 years and always been troubled by the government monopoly on currency, which is unhealthy for markets*," said Moore. "*It's very healthy for private competitors to challenge central banks over the money supply.*"[49]

Purpose

Stephen Moore is co-founding Frax with established crypto entrepreneur, Sam Kazemian. Sam is known for launching the blockchain Wikipedia competitor, Everipedia. Mahbod Moghadam, also a co-founder of Wikipedia and Genius.com,

[49] https://fortune.com/2019/10/21/stephen-moore-trump-fed-nomination-cryptocurrency-stablecoin-frax/

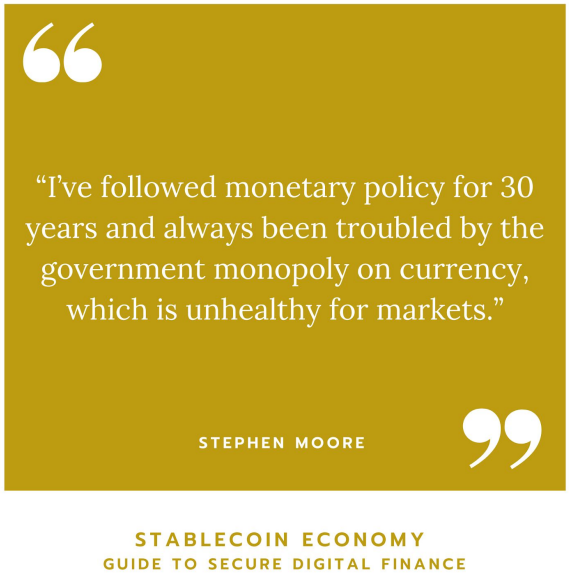
the world's largest collection of song lyrics and music knowledge.[50] Kazemian and Moore say right now Frax doesn't have any outside investors, but will launch in the next few months, relying on existing technology.

Founders claim Frax is unique as far as stable assets are concerned. Many existing Stablecoins are pegged to a one-to-one pool of reserve dollars, where Frax will rely on a fractional reserve. This one of a kind project relies on algorithms to loan out its reserves, while collecting interest. This ensures the value of Frax remains pegged to fiat. Sam claims this system will eliminate the need for central banking entities, as all the transactions will be safely stored and recorded on a blockchain.

Perfection, in theory. Yet, there isn't a real world case study yet. Some argue there can't be a guarantee of one-to-one backing. may all decide to sell at once, leading to collapse. Kazemian rebuttals with a solution: "*Frax's loan mechanism will ensure its stability.*"

Support

Stephen Moore says he's been approached by other cryptocurrency projects. He's made it known he feels cryptos can be valuable when governments follow misguided monetary policies. Stephen, well versed in economic history, warns governments have and may continue to deflate their currencies to pay back their debts. In his opinion, if users are given an alternative means of barter, governments could be deterred from pursuing deflationary policies.



For now, senior U.S. officials, many of whom have expressed deep skepticism about cryptocurrencies, do not appear to share his view. Central banks in other countries, however, have been more open to the potential of cryptocurrency. The Bank of Canada and the Bank of Japan, for instance, have been experimenting with crypto versions of their national currencies while Switzerland has created a special legal regime to foster the development of the crypto ecosystem.

[50] https://genius.com/

Moore stated in Fortune Magazine he hopes the Federal Reserve will eventually follow suit, "*If I had been on the Fed, I would like to have seen encouragement for the development of cryptocurrencies like Frax. It can be a check and balance against runaway currencies.*"[51]

Protocol

Frax will be a fractional-reserve, algorithmic Stablecoin.

According to the team, "*The basic premise is that we layer this over a collateralized stablecoin such as Dai and use interest from compound.finance loans to stabilize the price to $1 to 1 Frax algorithmically changing the supply of Frax.*"[52]

There is a 2 token system in place.

1. Frax, FRX (the Stablecoin)

2. Frax shares, FXS (the investment token)

The system starts 1 : 1 backed (reserve ratio of 100).

For every 100 Dai put in, there's 100 FRX minted.

The Dai is then lent out (either through the compound finance smart contract itself or the exact implementation within the Frax contract).

The cash flow from the interest rate earned through the loan is accrued into the smart contract.

Once there is a sufficient amount of interest earned, the reserve ratio goes down by X.

If X = 1 then for every 99 Dai put in, 100 Frax are minted.

The difference in the reserve ratio (aka X) must be paid in FXS as a fee (which is burned out of circulation) so that value isn't leaving the system but instead is being captured by the investment token.

[51] https://fortune.com/2019/10/21/stephen-moore-trump-fed-nomination-cryptocurrency-stablecoin-frax/
[52] https://ethresear.ch/t/defi-algorithmic-stablecoin-frax-feedback-wanted/6169

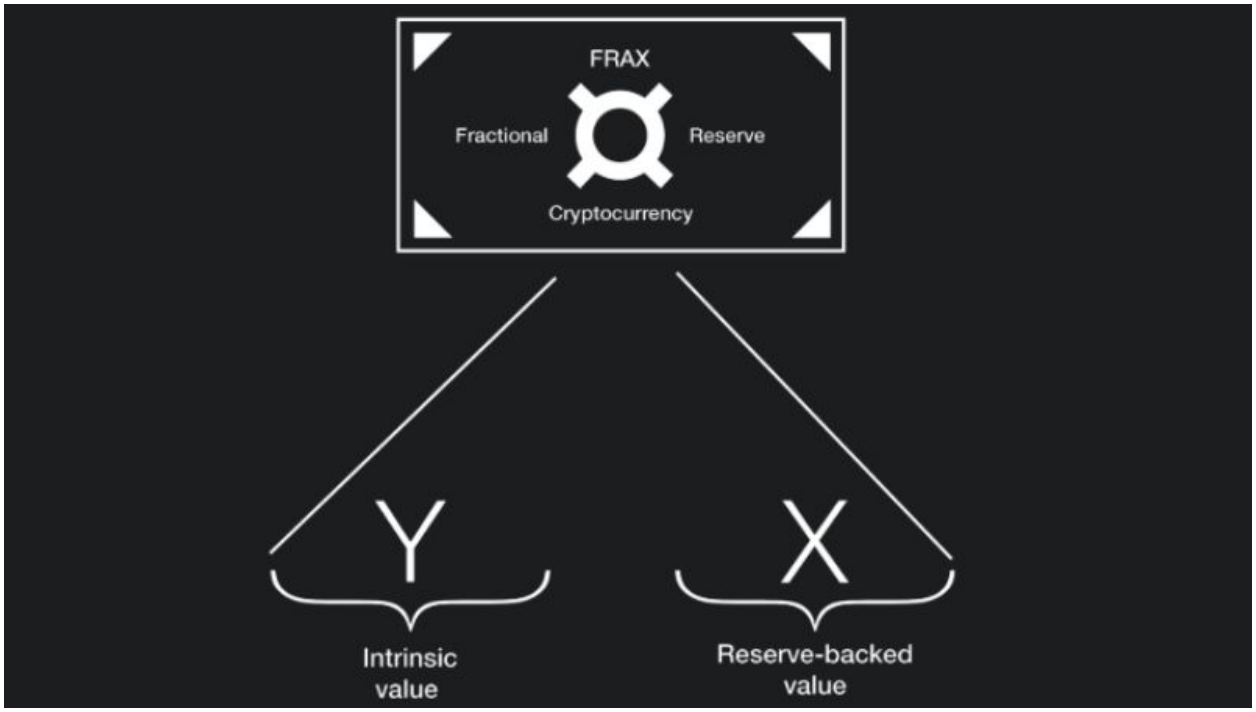
The investment token, FXS, is essentially valued as the net future fiat value creation of the network in perpetuity.

If the market price of FRX holds at $1, 1 FRX then the reserve ratio becomes more fractional by increasing X as more interest cash flow comes in.

If the FRX price drops because the market only values FRX based on backing collateral, the accrued cash flow is used to buy back FRX and “walk back” the reserve ratio to the market’s value of 1 FRX.

At all times, there is a small amount of Dai that is always kept in the contract to exchange out for FRX for easy redemption.

Essentially, this is a system to algorithmically measure the market’s value of the “monetary premium” of a currency. This can be used to scale Dai and allow DeFi loans to provide monetary policy/stability.



Chapter 8

How to use Stablecoins to Your Advantage

How to Protect Your Assets

We hope you are now confident in your Stablecoin knowledge. knowledge of Stablecoins. However, as the Sufi scholar Muhammad Tahir-ul-Qadri once said , "*If knowledge is not put into practice, it does not benefit one.*"

As an educated individual there's a few things you can do with your newly acquired wisdom as soon as you put down this book.

1. **Quickly Trade Fiat to Cryptocurrency.**
   Nearly every exchange in existence allows crypto to crypto trading. Very few exchanges allow you to trade crypto (directly) for fiat. This is where Stablecoins are particularly beneficial in today's digital currency trading market. Many Stablecoins are 1:1 equivalent to fiat, therefore, investors can almost instantly sell crypto for Stablecoins and convert to fiat without leaving their preferred exchange.

2. **Be Among the first in Fintech**.
   There's no question digital currency is the future. Milton Friedman, 1976 Nobel Memorial Prize winner in Economic Sciences for his research on consumption analysis, monetary history, theory and the complexity of stabilization policy, famously prophesied, "*I think the internet is going to be one of the major forces for reducing the role of government. The one thing that's missing but that will soon be developed, is a reliable e-cash.*"

Daily use of Stablecoins allows riskless, interchangeable payments with fiat but with secure and digital benefits. Stablecoins will be initially adopted for convenience. Stablecoins can then be used as an educational bridge to cryptocurrency, as blockchain technology matures.

3. **Use Stablecoins to Protect your assets.**
   Using 'Stop Loss," "Hedging" and "Harvesting" Strategies discussed on the following pages in detail.

Chapter 8

How to use Stablecoins to Your Advantage

How to Protect Your Assets

Stop Loss

It's difficult enough to correctly time one market, let alone two. The last thing anyone wants is to watch profits disappear.

For less advanced crypto-traders:

"Typical" Cryptocurrency Exchange Steps are as follows:

- Obtain Bitcoin or top Altcoin with centralized fiat-to-cryptocurrency exchange platform. (Allowing deposits)
- Transfer cryptocurrency to your preferred digital currency exchange.
- Trade, obtain, exchange, etc. on the exchange.
- To trade newly obtained crypto for fiat or protect assets in a fluctuating market, trade crypto back to Bitcoin or a chosen Altcoin on preferred trading exchange.
- Transfer cryptocurrency to centralized cryptocurrency-to-fiat exchange, allowing withdrawals.
- Sell Bitcoin or Altcoin on exchange and withdraw to your bank account.
- Wait 3-7 days for bank transfer.
    - Added fees with each exchange/transfer/trade/buy/sell

Stop Loss Method

To stop a loss in a volatile cryptocurrency market, simply exchange digital currency for Stablecoins. Use 'hedging' and 'harvesting' (discussed below) to gain a profit in a declining market.

Seasoned cryptocurrency traders are familiar with repeatedly refreshing their browser waiting for enough confirmations to approve a transaction.

Time has passed, but the asset is now tradable and secure. A few minutes here, a few minutes there, it all adds up. In that 10, 20, or 30 minutes, what's happened to the price of Bitcoin? Historical charts show a lot can change in a short amount of time.

A crypto buyout, another country ban, or major headline reporting "Bitcoin Died (Again) Today" has led to a 30% drops in the past. Stablecoins, while not guaranteed to hold their value, provide a much more likely way to retain profits.

Chapter 8

How to use Stablecoins to Your Advantage

How to Protect Your Assets

Hedging and Harvesting

It would be prudent to briefly cover the relationships between volatility, hedging, and harvesting. Some of these advanced investing strategies will lower the risk exposure in an overall portfolio. These investment strategies can help manage risk effectively, increase profits, be a passive income vehicle, and reduce costs/barriers to entry as seen in traditional financial markets.

To recap, exchanging fluctuating cryptocurrency investments into Stablecoins allows a stage to rebalance a portfolio during market dips to secure more investments. It then reinvests these profits gained during market highs.

Chapter 8

How to use Stablecoins to Your Advantage

How to Protect Your Assets

Hedging with Stablecoins

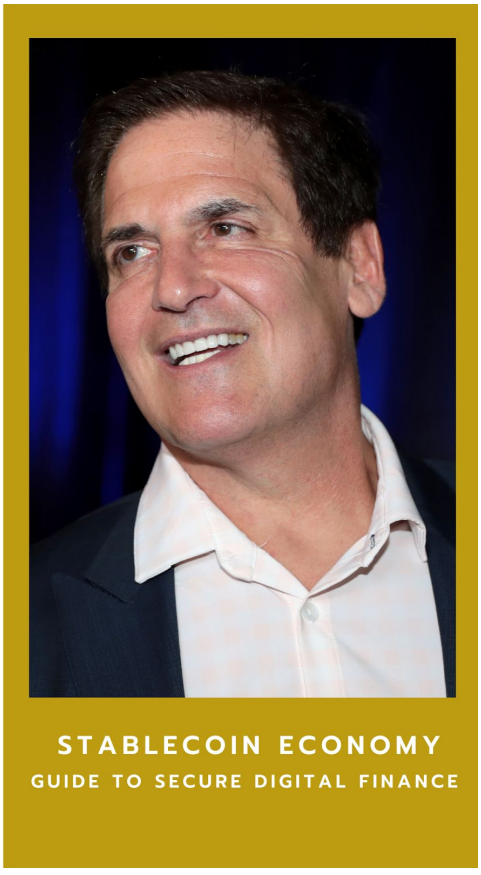
Definition

Investopedia defines a hedge as "*an investment to reduce the risk of adverse price movements in an asset.*"

Investopedia continues, "*One must use various instruments in a strategic fashion to offset the risk of adverse price movements in the market. The best way to do this is to make another investment in a targeted and controlled way.*"

Hedging is a complex investment technique for managing risk.

A successful hedge shows minimal portfolio losses.



Example
Reference chart below.

Portfolio begins with $1000: 50% Bitcoin and 50% Stablecoin.

In the event the Cryptocurrency Market Decreases by 20%, the portfolio is over-allocated to a Stablecoin (55.56%) and under-allocated in Bitcoin (44.44%). To rebalance a portfolio, a user can buy $50 worth of Bitcoin with Stablecoins. The portfolio is once again 50/50.

Thanks to the Stablecoin security, there's minimal loss in the overall portfolio. Bitcoin only decreases in relation to the US Dollar . The actual amount of Bitcoin held does not change .

Rebalancing the portfolio gives the investor more Bitcoin during market dips.

This is beneficial in a market increase and our harvesting scenario.

Event	**Bitcoin**	**Stablecoin**	**Portfolio**
Hedging			
Balanced Portfolio	50%	50%	Total: $1000 USD
Crypto Market Decreases 20%	44.44%	55.56%	100%
Rebalance Portfolio	buy $50 USD	sell $50 USD	BTC bought at a lower price using Stablecoins.
Ending Portfolio	50%	50%	Increase BTC investments Total: $900 USD

Chapter 8

How to use Stablecoins to Your Advantage
How to Protect Your Assets
Harvesting Bitcoin Profits while Hedging with Stablecoins

Harvesting Definition

Harvesting "*method is commonly referred to as an exit strategy, as investors seek to exit the investment after its success. Investors will use a harvest strategy to collect the profit from their investment so that funds can be reinvested into new ventures.*" Investopedia.com

Employing a harvest strategy will allow one to harvest maximum profits before the market reaches a decline stage.

Since 2017 the IRS Sec. 1031 does not apply to nested portfolio gains. Investors are left with alternative means to balance profits, losses, and US tax implications. The present guidance was issued in the IRS Pub. 2014-21 and again as clarification in 2019. Cryptocurrency is not inherently considered a security and therefore is not subject to wash loss sale limitations. This could possibly lead to an interesting tax planning methodology because taxpayers have the ability to harvest losses in a crypto market downturn and use those capital losses to offset current year capital gains.

Furthermore, up to $3,000 in annual losses can be used to offset ordinary income, or carried forward to offset future capital gains.

Please be advised this author is strongly suggesting hiring a certified tax professional before executing any tax mitigation strategy.

Example
Reference chart below.

In the event the Cryptocurrency Market Increases by 20%, the portfolio will hold more value in Bitcoin. Harvesting consists of taking the Bitcoin profit and reinvesting.

Rebalance the portfolio by taking 20% of the Bitcoin profit to purchase Stablecoins.

Portfolio is once again 50/50, however your Return on Investment (ROI) has risen.

Event	Bitcoin	Stablecoin	Portfolio
Harvesting			
Balanced Portfolio	50%	50%	Total: $1000 USD
Crypto Market Increases 20%	55.56%	44.44%	100%
Rebalance Portfolio	sell $50 USD	buy $50 USD	BTC sold at a higher price, giving $50 USD profit.
Ending Portfolio	50%	50%	Total: $1,100 USD

Chapter 9

History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

1. Tether (USDT)

Tether is a controversial cryptocurrency with tokens issued by Tether Limited. Tether was launched as RealCoin in July 2014 and was rebranded as Tether in November by Tether Ltd., the company that is responsible for maintaining its fiat reserves. It started trading on exchanges in February 2015.

The cryptocurrency is backed by an equivalent amount of traditional fiat currencies, like the US Dollar, Euro, or the Yen, which are held in a designated bank account. Tether was the first Stablecoin to be listed on exchanges in 2015, it's since become one of the most traded assets on the market.

Purpose

Tether is a fast and efficient way to transfer value from one exchange to another without the need for using a more volatile digital asset. The convenience of Tether, as well as the fact that Stablecoin was a substitute for the US dollar both appealed to stock magnates and everyday traders.

Tether falls under the Stablecoin category because it was originally designed to keep $1.00 in reserves for each Tether issued. Nevertheless, Tether Limited states the owners of Tether tokens have no contractual obligation to guarantee that Tether coins can be redeemed or exchanged for fiat. On 30 April 2019, Tether Limited's lawyer claimed that each Tether was backed by only $0.74 in cash and cash equivalents.

Tether Limited and Tether are controversial related to the company's failure to provide a promised audit showing adequate reserves, alleged role in manipulating

the price of Bitcoin, their unclear relationship with the Bitfinex exchange, and apparent lack of a long-term banking relationship.

Author David Gerard was quoted by the Wall Street Journal saying Tether "*is sort of the central bank of crypto trading ... [yet] they don't conduct themselves like you'd expect a responsible, sensible financial institution to do.*"

Tether's price decreased to $0.90 on 15 October 2018 on speculation that investors were losing faith in the token. On 20 November 2018, Bloomberg reported that U.S. federal prosecutors are investigating whether Tether was used to manipulate the price of Bitcoin. In 2019 Tether surpassed Bitcoin in trading volume with the highest daily and monthly trading volume of any cryptocurrency on the market.

Protocol

USDT formerly claimed that each token was backed by one United States dollar, but on 14 March 2019 changed the backing to include loans to affiliate companies.

In early 2017, USDT authors began to “print money” as traditional banks in the US and other countries do. At first, they stated that they would not increase the money supply of Stablecoin. But then they did the opposite, allegedly minting new Tether for the sake of increasing the price of Bitcoin in mid-2017.

Controversy

Only after a significant number of fraud allegations hit Tether in 2018, the price of the asset fell from $1 per token to 85 cents.

The Bitfinex exchange was accused by the New York Attorney General of using Tether's funds to cover up $850 million in funds missing since mid-2018. It failed because Tether dramatically increased the number of tokens in the circulation, making it unsteady until the market capitalization reached billions of dollars. Initially Tether had only a couple of tens of millions. Tether became a Stablecoin market monopolist and started releasing USDT coins without retaining an equivalent USD backing.

In November 2017, it was allegedly hacked. 31 million dollars worth of Tether coins were stolen, prompting a hard fork.

In January 2018, it hit another hurdle as the necessary audit never took place. Instead, it announced it was parting ways with the audit firm, after which it was issued a subpoena by regulators. Worries about whether the company, accused of a lack of transparency, has enough in reserves to back the coin have been pervasive.

In April 2019, New York Attorney General Letitia James accused iFinex Inc., the parent company of Tether Ltd. and operator of cryptocurrency exchange Bitfinex, of hiding a loss of $850 million dollars of commingled client and corporate funds from investors. Court filings say these funds were given to a Panamanian entity called Crypto Capital Corp. without a contract or agreement, to handle withdrawal requests.

Bitfinex allegedly took at least $700 million from Tether's cash reserves to hide the gap after the money went missing. In a statement, the companies said the filings *"were written in bad faith and are riddled with false assertions."*

Tether has the highest daily and monthly trading volumes. Tether's volume surpassed Bitcoin for the first time in April 2020 and since then it has constantly exceeded it at around US $21-billion/day.

"On the contrary, we have been informed that these Crypto Capital amounts are not lost but have been, in fact, seized and safeguarded. We are and have been actively working to exercise our rights and remedies and get those funds released. Sadly, the New York Attorney General's office seems to be intent on undermining those efforts to the detriment of our customers."

According to the Wall Street Journal, about 80% of all BTC trading is done with the help of USDT, ensuring liquidity on the crypto market.

- **Market cap**: $4,637,770,806
- **Circulating supply**: 4,642,367,414 USDT
- **Historical price fluctuations**: $0.84 – $1.21
- **Stabilization:** Each USDT Collateralized token has a corresponding $1 United States Dollar (USD) invested in an owned account.

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History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

2. TrueUSD (TUSD)

TUSD was the first regulated Stablecoin fully backed by the US Dollar. TrueUSD claims they "*are a financial technology company committed to creating and improving the standard of stable assets.*" *Further stating, "United Trust is building a financial ecosystem that encompasses the benefits of traditional fiat-backed stablecoins, but with decentralization in purest form. This ecosystem will allow institutions and businesses to seamlessly manage and trade their assets.*"

As of April 2020, TrueUSD was 100% secured by US dollars on legally protected escrow accounts with several partners of the bank bringing security and efficiency to sending and receiving payments. The first independent audit was conducted on March 1, 2018 and proved that almost $ 1.8 million is actually backing up TrustToken reserves.

Purpose

"*A true token only becomes a currency once it's used by markets as a store of value and means of exchange. TrustUSD is a stable asset protected against inflation and market volatility while also serving the world's underbanked.*" Tether claims they are "*money built for the internet.*" Promising "*Whatever you can do with digital currencies, you can now do with digital cash.*" Source.[53]

TrueUSD Protocol

Buyers pass the KYC and AML check and send USD to the trust company with an escrow agreement. When they check your funds, their API instructs our smart contract to issue the equivalent TrueUSD to your Ethereum public address.
To redeem the US dollar, you transfer the KYC / AML check, send a smart contract with your TrueUSD tokens from the Ethereum registered address, and then the

[53] https://tether.to/why-use-tether/

escrow bank will send you the funds. Your property on the account is legally recognized, and every 1 TrueUSD token you receive reminds of a redeemable certificate of ownership for $1.00 through escrow.

According to TrueUSD

"*TrustUSD is a protocol of money that ensures price-stability by algorithmically expanding and contracting supply. Our protocol is targeting mass adoption on a global scale and powering the next generation of decentralized applications on multiple blockchains.*"

"*Decentralized stable assets are very important to the future of cryptocurrencies. Cryptocurrencies have the potential to transform the financial landscape. Yet, price volatility remains a major barrier for mass adoption. Our answer is TrustUSD, a fully decentralized independent money protocol to become a new global currency.*
A cryptocurrency that has no clear purpose to be used in lieu of a traditional fiat currency is essentially useless.

TrustUSD has a vision to partner with major commerce systems and be utilized as a viable medium of exchange across the world. The protocol mechanism is actually quite simple: when token price exceeds $1 price target, the protocol will expand the total supply until price levels have reached a state of equilibrium. If the token price falls below $1, the protocol will contract the total supply until the price reaches the $1 target once again."

"*A protocol such as TrustUSD is simple, yet very effective. Many stable assets incorporate very complex systems that aren't very effective because simple economic principles are the most valuable information a project of this magnitude could hold. Along with that, many cryptocurrency investors want to see stable assets that are truly free from corruption and market manipulation, and we've brought a solution to those concerns.*"

- **Market cap**: $142,264,155
- **Circulating supply**: 142,451,763 TUSD
- **Historical price fluctuations**: $0.934 – $1.36
- **Stabilization:** Every TUSD token is backed by $1 United States Dollar (USD) held in an escrow account by third parties.

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History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

3. Maker DAI

MakerDAI allows users to take full advantage of cryptocurrency investing without worrying about market volatility. There are numerous strategies in play to keep Dai stable. The white paper displays well-thought-out reactions to potential problems the system may encounter, along with steps to mitigate the risk.

To understand DAI one must be introduced to MakerDAO, an open-source project on the Ethereum blockchain and a Decentralized Autonomous Organization created in 2014. Maker works to minimize the volatility of DAI, its stable token, compared to the U.S. dollar, with holders of MKR tokens governing DAI. Through a system of scientific governance involving Executive Voting and Governance Polling, MKR holders manage the Maker Protocol and the financial risks of Dai to ensure its stability, transparency, and efficiency. MKR voting weight is proportional to the amount of MKR a voter stakes in the voting contract, DSChief.

DAI promises to be "*The world's first unbiased currency. Dai is a stable, decentralized currency that does not discriminate. Any business or individual can realize the advantages of digital money.*" MakerDAI continues, "*Financial freedom with no volatility. A price-stable currency that you control. Generate Dai on your terms, instantly. Secure your Dai and start to earn the Dai Savings Rate set by the Maker community.*"

Protocol

"*The Maker Protocol, built on the Ethereum blockchain, enables users to create currency. Current elements of the Maker Protocol are the Dai stablecoin, Maker Collateral Vaults, Oracles, and Voting. MakerDAO governs the Maker Protocol by deciding on key parameters (e.g., stability fees, collateral types/rates, etc.) through the*

voting power of MKR holders. The Maker Protocol, one of the largest decentralized applications (dapps) on the Ethereum blockchain, was the first decentralized finance (DeFi) application to earn significant adoption." Source[54]

There are several foundations to the MakerDAI protocol including:

The Maker Foundation

"*The Maker Foundation, which is part of the global Maker community, built and launched the Maker Protocol in conjunction with a number of outside partners. It is currently working with the MakerDAO community to bootstrap decentralized governance of the project and drive it toward complete decentralization.*"[55]

The DAI Foundation

"*The Dai Foundation, based in Denmark, is self-governing and independent of the Maker Foundation. It was formed to house the Maker community's key intangible assets, such as trademarks and code copyrights, and it operates solely on the basis of objective and rigid statutes that define its mandate. Its purpose, as noted in the Dai Foundation Trust Deed, is to safeguard what cannot be technologically decentralized in the Maker Protocol.*" Source[56]

Multi-Collateral DAI

The collateral types that MKR voters can select to evaluate first are found at blog.makerdao.com.[57]

"*The flexibility of the Maker Protocol means that almost any kind of asset that can be tokenized can be made available as collateral in the system, as long as it has appropriate risk parameters. To ensure that the system is capable of supporting a wide range of asset types, the Maker Foundation built within it a series of 'connectors' to allow for real-world collateral testing and auditing of MCD.*
The first collateral types to be tested were chosen by the Maker Foundation based on diversity, an average daily volume of several million USD, and the relative stability of each token."

With DAI, the team at MKR hopes to overcome the sometimes violent price swings associated with cryptocurrency. In their whitepaper the team cites examples like

[54] https://makerdao.com/en/whitepaper#abstract
[55] https://makerdao.com/en/whitepaper#abstract
[56] https://makerdao.com/en/whitepaper#abstract
[57] https://blog.makerdao.com/multi-collateral-dai-collateral-types/

Bitcoin falling 25 percent in one day or rising more than 300 percent in one month. The team at Maker DAO feels that stable digital assets are needed for blockchain technology to reach its full potential. For this reason, they introduced DAI, which is backed by collateral.

Although the price of DAI Stablecoin also equals $1.00, DAI is backed by Ethereum-based smart contracts with redundancy. Dai is stabilized by external market factors such as collateralized debt positions (CDPs), autonomous response mechanisms, and external economic incentives. DAI is more decentralized because only users can create and destroy the token. DAI tokens appear only after the deposit has been paid and disappear after the debt has been paid.

> With DAI, the team at MKR hopes to overcome the sometimes violent price swings associated with cryptocurrency. In their whitepaper the team cites examples like Bitcoin falling 25 percent in one day or rising more than 300 percent in one month.

Issued on the MakerDAO platform, DAI is more transparent and fair as evidenced by all operations run by smart contracts. It is currently the 60th cryptocurrency by market cap, DAI is a good fit for betting, financial markets, international trading, and transparent auditing. It should be noted that Maker also gives users the chance to choose the ecosystem's collateral types.

- **Market cap**: $117,349,145
- **Circulating supply**: 116,680,177 DAI
- **Historical price fluctuations**: $0.72 – $1.37
- **Stabilization:** For the generation of DAI tokens, users need to purchase and stake an equal value (in United States Dollar, USD) of Ethereum, or ETH tokens. When the cost of DAI rises, users will be incentivized to create more. If the price falls, users will be incentivized to sell their DAI back to the pool.

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4. USD Coin (USDC)

The United States Dollar Coin or USDC, was launched in September 2016 and quickly gained ground as one of the more influential fiat pegged stable tokens. One year later USDC reached a total supply of 421,469,737 coins, becoming the second largest fiat pegged asset behind Tether (USDT). The minting of USDC is controlled and reflects real-world fund inflows. USDC has continued growing despite the occasional token burn, as the asset works like a fiat off-ramp in crypto trading, as many Stablecoins aim to accomplish.

"*USDC has established itself as the second most popular Stablecoin in the world; it has unparalleled support from more than 100 companies across the global crypto ecosystem, and it's the first Stablecoin to reach $1 billion in issuance in less than a year*," stated the CENTRE Consortium.[58]

USD Coin is the Stablecoin crypto created by Coinbase exchange and Circle company. It's positioned as a Stablecoin with financial and operational transparency. The exchange of cryptocurrency for fiat is carried out in the Circle USDC application which emits cryptocurrency. All services offered are available in the application: conversion, money transfers, and more.

Purpose

Circle launched its own US dollar Stablecoin, called USD Coin (USDC). The $3 billion fintech startup has made a series of deals and announcements in a long-term bet that, despite the bear market, the crypto economy will persevere.

[58]https://medium.com/centre-blog/usdc-celebrating-the-1st-anniversary-of-the-fastest-growing-stablecoin-4a05dc3784b8

Circle's USDC is meant to represent a single U.S. dollar. It is a 1 : 1 representation of the greenback on the Ethereum (ETH) blockchain. Circle emphasizes that each USD Coin is collateralized by a corresponding US dollar, which are held in accounts subject to regular audits and public reporting.

"*As more goods and services are tokenized, smart contract platforms will become fundamental building blocks of value exchange. CENTRE's open-source and transparent Stablecoin framework allows fiat to interact with smart contracts, giving developers a viable way to use real world currencies in blockchain applications.*"[59]

Circle cofounders Jeremy Allaire and Sean Neville stated, "*Coinbase and Circle share a common vision of an open global financial system built on crypto rails and blockchain infrastructure, and realizing this vision requires industry leaders to collaborate to build interoperable protocols and standards.*"

When launching, commentators questioned the financial system's openness since personal information must be provided to use USDC. Moreover, USDC is a centralized token, with KYC and AML verification. Users do not have full control of their funds, unlike Bitcoin. USDC is not a decentralized cryptocurrency, it acts as digital entries on Circle's balance sheet that can be blacklisted or frozen.

Protocol

USDC on their website claims, "*USD Coin (USDC) is a type of cryptocurrency that is referred to as a Stablecoin. You can always redeem 1 USD Coin for US $1.00, giving it a stable price. On Coinbase, eligible customers can earn rewards for every USD Coin they hold.*"

CENTRE says the purpose for USDC is found within their mission, "*Our mission is to build an open financial system for the world. As part of this mission, we want everyone to enjoy the stability of the world's fiat currency, the US dollar. USD Coin allows unbanked and under-banked individuals in any country to hold a US dollar–backed asset with nothing more than a mobile phone.*"

CENTRE is proud of its transparency, "*CENTRE Stablecoins are issued by regulated and licensed financial institutions that maintain full reserves of the equivalent fiat currency. Issuers are required to regularly report their USD reserve holdings, and Grant Thornton LLP issues reports on those holdings every month.*"[60]

[59] https://www.centre.io/developer-resources
[60] https://www.coinbase.com/usdc

Coinbase and Circle agree that programmable currency is a necessity, "*Being programmable unlocks a whole new world of applications and businesses: developers can create accounts to store money with one line of code; lending that is faster, cheaper, and more transparent; faster and cheaper payments, including payroll; global crowdfunding; transparent and stable donations to charity.*"

The Circle, Inc. a notable fin-tech company and Coinbase joined efforts to rapidly grow the supply of USDC.

USDC started off with a supply of roughly 24 million coins and later reached a peak supply above 450 million coins. USDC now participates in 169 trading pairs fueling Binance trades as part of its basket Stablecoin market.

USDC also links both Western and Asian exchanges, being accepted by most major market operators. USDC was one of the first Stablecoins to add customer screening, or KYC, to avoid fueling terrorism financing.

USDC has a daily turnover of around $200 million, still smaller in comparison to other Stablecoins, although USDC also has the advantage of being offered to merchants through the Coinbase payment system.

This Coinbase Stablecoin can be emitted by banks. CENTRE focuses on the global market and plans to attract more international banks for that. It partners with such companies as Goldman Sachs, Bitmain, and Blockchain Capital.

In March 2020, USDC became the first Stablecoin to reach $1 billion issued in less than a year.

- **Market cap**: $437,960,448
- **Circulating supply**: 436,495,713 USDC
- **Historical price fluctuations**: $0.97 – $1.11
- **Stabilization:** Each United States Dollar Coin (USDC) token is backed by $1 United States Dollar (USD) invested in an account. Circle company ensures fluctuations.

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Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

5. Paxos Standard Token (PAX)

Paxos claims they're "The New Digital Dollar. Paxos Standard (PAX) combines US Dollar stability with the efficiency of blockchain technology." Paxos Standard Token (PAX) is a Stablecoin developed by Paxos Trust Company, LLC. PAX price is tethered to the United States Dollar in 1 : 1 proportion, it launched with approval from New York regulators, according to a press release from September 10, 2018. Source.[61]

This backed 1 : 1 Ethereum blockchain-based stable digital asset has been approved by the New York State Department of Financial Services (NYDFS), which exercises regulatory oversight over the asset's issuance and trading.

Purpose

The Paxos Trust Company team aims to combine the speed of the digital assets and security with the protections of the old school financial systems. PAX was designed specifically to provide the cryptocurrency market with stability and user confidence.

Paxos itself is a Trust company and positions itself as "*a fiduciary and qualified custodian of customer funds*," claiming its token as offering "*greater protections*" for customer assets than its competitors.

Paxos co-founder and CEO Charles Cascarilla says the asset "*improves on the utility of money*" by fusing the stability and robust regulatory oversight of traditional fiat currencies with crypto's promise to create frictionless flows of digital value.

Protocol

Paxos is a ERC-20 token, meaning can be received and sent by users of an Ethereum wallet. Transactions are conducted alongside the rules of the Ethereum

[61] https://www.prnewswire.com/news-releases/paxos--launches-new-stablecoin-paxos-standard-300709434.html

network and share all of its features including smart contracts for the elimination of the human errors.

The dollar deposits of the Paxos Trust are held in collateralized by U.S. government treasuries or FDIC-insured U.S. banks and are accounted for as a property of the tokens' users. Moreover, when Paxos Standard tokens are in circulation, the corresponding dollars are held in reserve. Upon redemption for dollars, Paxos Standard tokens are immediately destroyed. Tokens are only in circulation when the corresponding dollars are in custody.

PAX retains simple integration of Paxos payments, it's a safe and reliable instrument for transactions. Paxos also other favorable attributes including:

- No transaction fees
- 24/7 customer support Ethereum-based transactions
- Attestation by Withum company
- Fully backed by the US dollar

PAX can be used in a number of cases:

- Suitable for cryptocurrency traders to use during volatile periods.
- Has an advantage over fiat currencies in terms of cryptocurrency exchange. It is faster and cheaper to use for exchange, which is of high utility in terms of purchases that need to be performed fast
- Can be used as a cash component of transaction at the time outside of traditional banking hours

PAX was created to be an alternative to Tether (USDT). PAX is traded with other assets that are available on the site. In particular, you can use PAX to purchase or sell Bitcoin, Ethereum, Binance Coin, EOS, XRP, as well as Stellar Lumens. Being a ERC-20 token, Paxos ensures transparency. PAX has become a Top 100 in cryptocurrencies. Possibly in relation to successfully completing two audits. Specialists of Nomic Labs revealed no issues during inspection.

- **Market cap**: $198,898,483

- **Circulating supply**: 198,449,056 PAX

- **Historical price fluctuations**: $0.97 – $1.10

- **Stabilization:** Collateralized 1 : 1 by the United States Dollar (USD), controlled and regulated by the NYDFS.

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6. Bitshares (BitUSD)

BitShares is an open-source, public, blockchain-based real-time financial platform. It provides a built-in decentralized asset exchange, similar to New York Stock Exchange but for cryptocurrencies and without the need to trust a central authority. It can execute trading using an international network of computers in which anyone can take part. BitShares also provides a cryptocurrency token called "BTS", which can be transferred between accounts and is used to collect fees for network operations and as a collateral for loans.

Purpose

On June 2nd 2013, Dan Larimer discovered a way of creating a fiat-to-Bitcoin exchange without fiat deposits. His solution was introducing a token that is backed by another token on the same blockchain. Dan Larimer and Charles Hoskinson, a co-founder of Ethereum, presented a business plan to Li Xiaolai, a Chinese Bitcoin entrepreneur, who agreed to fund its development. The BitShares X project received a great deal of attention in August 2013 when CoinDesk and BitcoinTalk forums published a project announcement[62]

On July 4th 2013 Hoskinson and Larimer founded Invictus Innovations and in October 2013 they presented the concept of BitShares at the Atlanta Bitcoin Conference. The token launched in 2014 and since March 2016 the project is a part of Microsoft Azure Blockchain[63] as a Service package. Charles Hoskinson, founder of the Bitcoin Education Project and Cardano, has since left the team.

[62] https://www.coindesk.com/bitshares-p2p-trading-platform-to-offer-dividends-on-bitcoins
[63] https://azure.microsoft.com/en-us/blog/tag/bitshares/

Protocol

Consensus is the mechanism where organizations decide upon unitary rational action. Consensus technology is the basis of democratic governance and the coordination of free market activity. The process of consensus decision-making allows for all participants to choose a course of action by consensus. Bitcoin was the first system to integrate a fully decentralized consensus method with peer-to-peer networks in order to more efficiently facilitate the transfer of value through electronic communication. The proof-of-work structure that secures and maintains the Bitcoin network is one way of organizing individuals who do not necessarily trust each other to act in the best interest of all participants of the network. The BitShares ecosystem employs Delegated Proof of Stake in order to find efficient solutions to distributed consensus decision making.

Distributed Autonomous Companies (DAC) run without any human involvement under the control of an incorruptible set of predefined rules. These rules are implemented as publicly auditable open source software distributed across stakeholders. One becomes a stakeholder by obtaining "stock" in the company. This stock may entitle an investor to a share of its "profits".

The BitShares community is a global network of individuals that share the same goal of participating in various Distributed Autonomous Companies. The community mainly revolves around the BitShares Team and third parties who use Graphen, the toolkit that makes BitShares possible, to create their own Distributed Autonomous Companies. BitShares community discussions take place openly at BitSharestalk.org.

BitUSD's value is backed by futures, fiat, gold, silver, and other assets.
BitUSD has the following advantages:

- It's a relatively reliable investment tool due to the predictable price of the asset and minimal volatility;
- Hedging against sudden price action and sudden cryptocurrency market movements;
- This unit of account is different from assets with capital gains or losses.

BitShares claim they are 'SmartCoins'. They claim "SmartCoins take the concept of a contract for difference, and make the long side fungible. For the purpose of this

discussion, we will assume that the long side of the contract is BitUSD and that the backing collateral is BTS (the BitShares core asset). To achieve this SmartCoins use the following set of market rules:

1. Anyone with BitUSD can exit their position within 24 hours at settlement price.

2. The least collateralized short positions are used to settle the position.

3. The price feed is the median of many sources, updating at least once per hour.

4. Short positions never expire, except by hitting the maintenance collateral limit, or being force-settled as the least collateralized at the time of forced settlement.

5. In the event that the least-collateralized short position lacks enough collateral to cover at the price feed, then all BitUSD positions are automatically force settled at the price of the least collateralized short.

According to BitShares, "*SmartCoins are a powerful tool for everyone from speculators and savers to traders and entrepreneurs. The BitShares platform provides a toolset with which innovators can experiment to find optimal currency solutions using free market discovery.*"

- **Market cap**: $2,066,629

- **Circulating supply**: 2,163,170 BITUSD

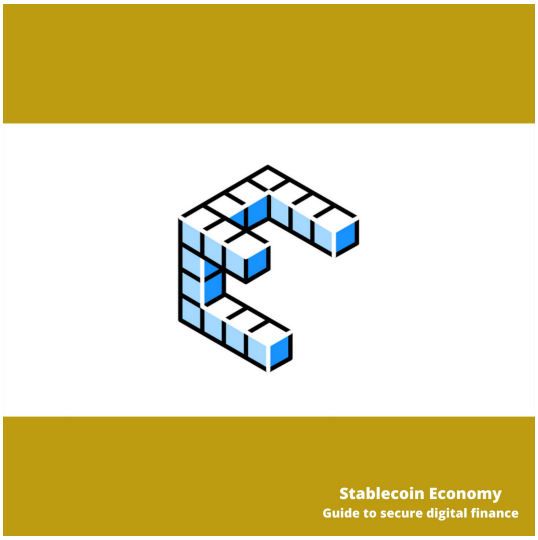
- **Historical price fluctuations**: $0.43 – $1.25

- **Stabilization: Collateralized** 1 : 1 by the United States Dollar (USD). Backed by fiat, silver, gold, and other assets.

Chapter 9

History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.



7. EOSIO (EOSDT)

Equilibrium EOSDT is a stablecoin designed for the future of cryptocurrency diversification. It is built on the Equilibrium framework, which leverages the EOS blockchain on Ethereum architecture, making it a more stable and practical cryptocurrency.

Purpose

"*The EOS blockchain is quite fast with huge network capacity and excellent potential for development*," said Alex Melikhov, CEO of Equilibrium. "*Equilibrium is the framework, the technology basis, for building decentralized stablecoins. The first proof of concept was the EODST Stablecoin that we launched in April 2019. And we think it has succeeded in terms of its traction so far.*"

EOSDT is the world's first decentralized Stablecoin on the EOS blockchain, pegged to the U.S. dollar and backed by a user's own crypto holdings.

Currently, they accept EOS and aim to create the basis for asset-backed Stablecoins across multiple blockchains that support smart contracts.

"*We chose to start with the EOS blockchain and EOSIO technology because it is faster than Ethereum, has near-zero transaction fees, and boasts an infrastructure robust enough to offer a high-quality experience to lots of users at once. [...] EOS is our first choice because it offers great infrastructure prospects with the implementation of cross-chain solutions and support for multiple forms of collateral for the EOSDT stablecoin.*"

Protocol

EOSDT token is the asset of Equilibrium smart contract platform that serves for creation of asset-backed tokens or it's the world's first decentralized Stablecoin on the EOS blockchain. Every EOSDT is pegged to the US dollar. Users can generate EOSDT and choose the underlying asset.

Protocol process is as follows:

1. User generates EOSDT tokens with EOSIO technology on the basis of Equilibrium platform. Any user holding a digital asset compatible with the Equilibrium framework can leverage it to generate EOSDT Stablecoins using a self-service gateway[64] with an intuitive user interface.

2. The collateralization options are chosen and then implemented in the smart contract. This position holds the deposited collateral, then a user decides how much EOSDT needs to be generated . These freshly minted stablecoins are backed by deposited collateral within the position, which can be recovered by paying back the equivalent amount of EOSDT along with any accrued fees.

3. EOSDT tokens can be used in any convenient way (for storage, crypto exchange, payments, etc). Recovered collateral can be withdrawn by the position holder. Active positions are always overcollateralized, meaning the value of the collateral exceeds the value of the generated stablecoins. The framework seeks to maintain the minimum viable ratio of collateral to loan at all times.

EOSDAQ, Newdex and DEXEOS have listed EOSDT as a Stablecoin, so its adoption is in the progress.

- **Market cap**: $4,662,500
- **Circulating supply**: 4,600,116 EOSDT
- **Historical price fluctuations**: $0.91 – $1.32
- **Stablazation**: Crypto-collateralized, or collateralized with chosen asset

[64] https://gateway.eosdt.com/

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History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

8. Gemini (GUSD)

The Gemini Dollar (GUSD) is the result of a collaboration between the Gemini Trust Company and the New York Trust company. Founded in 2014, the Gemini Trust Company, LLC or Gemini, is the digital currency exchange and custodian that allows customers to buy, sell, and store digital assets. Gemini is a New York trust company that is regulated by the New York State Department of Financial Services (NYDFS).

The Winklevoss twins announced Gemini in June 2013 and developed the Gemini Trust Company in 2014. By October 25, 2015 Gemini had an official launch date. Gemini began adding to the financial services offered thereafter, including FIX and API support. On May 5, 2016 Governor Andrew Cuomo of New York State announced Gemini as the first licensed Ethereum exchange based in the United States. Additionally, in 2016, Gemini reported they would let users withdraw Ethereum Classic (ETC) from the exchange, following a hard fork in Ethereum's code. The following month CNBC broadcasted their advancements and Gemini became international news.

According to reports by Fortune Magazine and Bloomberg News, Gemini was the first exchange to launch Bitcoin futures contracts in December 2017. Fortune Magazine reported the Chicago Board Options Exchange (CBOE) uses Gemini "*as the basis for the daily settlement for the Bitcoin futures.*" Bloomberg News reported Gemini began offering "Block Trading" in April 2018. Block Trading enables users to buy and sell large quantities of digital assets outside of Gemini's continuous order books, which creates additional liquidity mechanisms when trading in greater amounts. In April 2018, it was reported by Reuters that Gemini would be utilizing NASDAQ's SMARTS technology to monitor trades and combat fraudulent activity and price manipulation on its exchange.

On May 14, 2018, the New York Department of Financial Services announced it had approved Gemini to offer Zcash (ZEC) on their platform. The NYDFS commented that its decision was a "continuation of New York's longstanding commitment to innovation and leadership in the marketplace." Gemini's CEO, Tyler Winklevoss, was quoted in the same press-release saying that Gemini "*is proud to be the first licensed exchange in the world to offer Zcash trading and custody services*."

On September 10th, 2018, Bloomberg News reported that Gemini had received regulatory approval for the Gemini dollar (GUSD) from the NYDFS and would launch trading that day. On October 3rd, Gemini obtained insurance covering digital assets held on its exchange. Bloomberg Markets stated the insurance was brokered by Aon, a London based public risk consulting company, and underwritten by a consortium of global underwriters.

Purpose

Gemini claims to be "*The world's first regulated Stablecoin, designed for high scale and usability in all kinds of transactions. Gemini dollar (GUSD) is purpose-built to bring the value of the U.S. dollar into the modern digital era.*" Gemini was founded to facilitate the purchase and storage of Bitcoin through a complex system of private keys and password protected environments. GUSD was created as the direct competitor for the Tether cryptocurrency. Although the company was accused of non-transparent operations, according to Cameron Winklevoss, to date, none of the existing coins pegged to the dollar can be rightly called a Stablecoin.

Gemini states they've conquered trust with their token, "*Building a viable stablecoin is as much of a trust problem as it is a computer science one. While Bitcoin created a system based on cryptographic proof instead of trust, a fiat-pegged stablecoin requires both due to its reliance on a centralized issuer. Desirable outcomes in a system that relies (at least in part) on trust requires oversight. In the context of a stablecoin, we submit that the issuer must be licensed and subject to regulatory supervision. From this, transparency and examination become requirements of the system, ensuring its integrity and 1 engendering market confidence. We propose Gemini Trust Company, LLC (Gemini), a New York trust company, as the issuer of the Gemini dollar. Gemini operates under the direct supervision and regulatory authority of the New York State Department of Financial Services and is subject to the New York Banking Law and other applicable U.S. laws and regulations. Gemini maintains the necessary licenses and registrations to lawfully issue Gemini dollars.*[65]"

[65] https://gemini.com/static/dollar/gemini-dollar-whitepaper.pdf

Protocol

From the Gemini White Paper "*The Gemini dollar is a cryptographic token that is issued by a New York trust company, strictly pegged 1 : 1 to the U.S. dollar, and built on the Ethereum network according to the ERC20 standard for tokens. The Gemini dollar is a stable value coin that combines the creditworthiness and price stability of the U.S. dollar with the technological advantages of a cryptocurrency and the oversight of U.S. regulators. As an ERC20 compliant token, the Gemini dollar can be transferred on the Ethereum network. Gemini dollars are created at the time of withdrawal from the Gemini platform and redeemed or "destroyed" at the time of deposit into the Gemini platform.*[66]"

Gemini dollar has several distinct advantages:

- The Gemini Dollar cryptocurrency is under the direct supervision of the New York State Department of Financial Services (NYDFS) and is fully subordinate to US laws and regulations
- The dollars that the coin is supported with are kept in a special bank account of the American holding company State Street Corporation, which was developed by 150 programmers
- The company account is insured by the Federal Deposit Insurance Corporation (FDIC)
- The number of dollars in the account strictly corresponds to the number of tokens in circulation. This equality is monitored by independent audit firm BPM Accounting and Consulting
- **Market cap**: $4,004,518
- **Circulating supply**: 3,968,720 GUSD
- **Historical price fluctuations**: $0.95 – $1.19
- **Stabilization:** Collateralized 1 : 1 by the United States Dollar (USD), controlled and regulated by the NYDFS

[66] https://gemini.com/static/dollar/gemini-dollar-whitepaper.pdf

Chapter 9

History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

9. Binance GBP (BGBP)

The BGBP Stablecoin was Binance's first step towards the cryptocurrency exchange ambition to build a collection of Stablecoins pegged to different fiat currencies on the Binance blockchain.

On July 19, 2019, Binance Jersey, the fiat to cryptocurrency exchange that accepts Euros (EUR) and British Pounds (GBP) announced the listing of its GBP backed token, the Binance BGBP Stablecoin. This digital asset is pegged to the Great Britain Pound (GBP) and backed by fiat in reserve. The token is based on the Ethereum platform.

The Binance Jersey Exchange first announced that it was testing a GBP backed Stablecoin in early June 2019. Binance CEO Changpeng Zhao confirmed that only £200 worth of the stable asset had been issued. During the GBPB launch there were only two other venues that provided GBP pegged Stablecoins: the TrueGBP project and the eToro GBP Stablecoin project.

Purpose

Binance says they wanted to continue offering more options in the cryptocurrency space by providing its European users with better trading experiences. Wei Zhou, CFO of Binance, said: "*There has been an overwhelming demand in the market and Binance community for more Stablecoin diversification, including a GBP-pegged Stablecoin, and listing BGBP is in response to it. Use cases and the utility of Stablecoins have increased as well as* BNB, *which has tripled since the beginning of the year and continuing to grow rapidly with the advancement of Binance Chain.*"

Protocol

Binance Jersey says they provide secure and reliable trading of the Euro (EUR) and British Pound (GBP) with Bitcoin (BTC) and Ethereum (ETH), in addition to digital asset management services to users from around the world.

Binance is a blockchain ecosystem composed of several arms to serve the greater mission of blockchain advancement and the freedom of money.

The Binance Exchange is the leading global cryptocurrency exchange by trading volume, with users from over 180 countries. Capable of processing more than 1.4 million orders per second, Binance is one of the fastest cryptocurrency trading platforms in the world. The platform focuses on security, robustness and execution speed.

The Binance ecosystem is also comprised of Binance Labs, the venture capital arm and incubator; Binance DEX, its decentralized exchange feature developed on top of its native, community-driven blockchain software system, Binance Chain; Binance Launchpad, the token sale platform; Binance Academy, it's educational portal; Binance Research, the market analysis; Binance Charity Foundation, the blockchain powered donation platform and nonprofit for aiding in sustainability and Trust Wallet, its official multi-coin wallet and dApps browser.

- **Market cap**: unknown
- **Circulating supply**: unknown
- **Historical price fluctuations**: $1.19 – $1.25 (~1 £)
- **Stabilization:** Collateralized 1 : 1 by the Great British Pound (GBP), reserves are stored in Binance's bank.

Chapter 9

History of the Top Ten Stablecoins

Brief History of the top ten Stablecoins that have the highest market cap from 20`15-2020.

10. StableUSD (USDS)

Stably is the creator of Stably Dollar (USDS) & Stably Prime. Stably states the "*Stably Dollar is the 7th largest United States Dollar backed Stablecoin in the world, featured on major crypto exchanges like Binance and Bittrex.*" Stably Prime claims to be a borderless account with a multitude of financial services and products, customizable to the individual or institution's specific needs.

In April 2018, Stably announced the development of StableUSD, later changing its name to Stably Dollar (USDS). USDS is a transparently regulated Stablecoin created by Stably, Inc. USDS is a fiat-collateralized token pegged 1 : 1 with the United States Dollar (USD) held by a third party custodian. Stably Inc. opened early access to Stably Dollar on the Ethereum blockchain in November 2018.

Purpose

Stably Dollar is a reserve backed Stablecoin founded by Kory Hoang, Bryan Guy, David Zhang, and Amiya Diwan, the founders of Stably Inc. The token was designed to fill needs other Stablecoins lacked and provide a price stable asset.
Stably states, "*Our mission is to make financial transactions faster, cheaper and more transparent through a Borderless Neobanking platform powered by blockchain, Stablecoins and open finance APIs.*"[67]

Protocol

Stably Dollar (USDS) is secured by US dollars held by Prime Trust, an American regulated trust company. According to the company's blog, Stably Dollar (USDS) uses a proven centralized model to fully back up each issued token. The emission process will allow the use of Bitcoin (BTC), Ethereum (ETH) or Tether (USDT).

[67] https://www.stably.io/about

The transferred cryptocurrencies will be converted into US dollars in the free market through the intermediary of a third-party manager. The corresponding amount in Stably Dollar (USDS) will then be released and sent to the client through a smart contract, ForkLog reports.

Stably.io states "*Stably USD (formerly "StableUSD"), also known as USDS, is a US Dollar-pegged Stablecoin fully backed 1 to 1 and redeemable for USD held in an FDIC-insured trust account managed by Prime Trust, a state-chartered trust company in Nevada who is the token's official regulated trustee and administrator. USDS is currently the 7th largest USD-backed stablecoin in the world and it is also featured on major cryptocurrency exchanges like Binance, Binance DEX and Bittrex. USDS is based on the ERC-20 token standard for Ethereum and the BEP-2 standard for Binance Chain at the moment and we will expand USDS to more blockchain protocols in the future, including EOS and Stellar.*"

Stably predicts, "*In the near future, Stably and our regulated partners will release more Stablecoins backed by other national currencies as well as commodities and precious metals such as gold and silver. We will also expand to other blockchains that have better features such as speed, scalability and security.*"

- **Market cap**: $1,440,845
- **Circulating supply**: 1,594,299 USDS
- **Historical price fluctuations**: $0.89 – $1.13
- **Stabilization:** Collateralized: 1 : 1 by the United States Dollar (USD). Backed by USD and held in reserve by the Prime Trust Company.

Chapter 10

Evolution in Stablecoins

A Peculiar Alternative Currency: The HODLCommodity

As cryptocurrency and Stablecoins advance, many question where the future is heading. An open source project may give a window into the future.

Utopian dreamers, technologists and financial masterminds from around the globe often ponder, is it possible to create an endless chain of wealth generation?

Digital financial experts are questioning if an intrinsic value can be placed within a token and allow the currency to also be its own exchange, both uncontrolled and uncensored.

The HODL project poses these questions and opens the door to many fascinating others.

HODL project's white paper terms their endeavour a "social experiment". As the known dynamics of supply and demand are used unconventionally, it goes squarely in a category of experimental economics.

At first glance it is easy to dismiss this challenge as a *Ponzi scheme*, where the early investor is paid from the investment of subsequent investors, creating the illusion of a sustainable network. This would work as long as there is a steady supply of new funds and/or early investors do not liquidate a mass amount of their assets at once.

In the HODLCommodity project the sustainability of the network is based on a balance between supply and demand. If there is too much supply and not enough demand, the price will stagnate or grow slowly. Conversely, if there is too much demand and not enough supply, the price will also stagnate or steadily increase.
In any case, like a Ponzi scheme, the network depends on the continuous injection of funds and the constant sale of assets to function. However, unlike a Ponzi, the tokenomics of HODL do not rely on a steady stream of naive investors. Instead, savvy investors are needed to create a balance between holding and selling, thus increasing the price incrementally.

The tokenomics of HODL create a strong inclination toward holding, as it is beneficial to hold onto an asset as long as possible. Granted, this must be balanced

with selling as excessive holding leads to price stagnation. In this case profit is realized through the liquidation of assets for Ether. Similar to the stock market or other commodity or crypto-asset exchange, the asset is purchased by new or recurring participants. The main difference would be that instead of price volatility, you have price increase volatility and an available liquidity threshold. This means that the increase in price will fluctuate from day-to-day according to the current trading board and that liquidity will be proportional to the current volume of buying and selling. These are all known forces of economics.

In a normal Ponzi, the cascading effect of paying the early investor with a subsequent one is unsustainable, because there is no reason to inject funds other than investment and no actual profit is generated through the business process. investors lose confidence and the business ends up with no assets to liquidate.

Interestingly enough, in the commodity market, there is no reason to buy or sell assets other than for investment purposes, rather than speculative purposes. Return on investment is calculated by subtracting the entry price from the exit price, which, in this case, will always be positive if calculated from a USD perspective and will fluctuate when compared to other crypto-assets (the price of other crypto-assets fluctuate in relation to USD.) This, in itself, enables participants to leverage the network continuously, to protect capital in the form of digitals assets, and to make hedging crypto-assets much safer, provided there is a buying and selling market.

This also can serve as a robust savings account; the returns might not be as impressive as typical digital assets, but fluctuations are mitigated.

As the network does not belong to any individual, it has been designed so that tokens are initially drawn from a reserve. The smart contract holds only the pre-minted tokens. Once the reserve is empty, no more will be minted, and the network will need to rely on itself to match supply with demand.

One intriguing feature of tokens like HODLCommodity is that it is initiated from a smart contract that acts as its own exchange, bypassing the need for an exchange listing, and making the exchange decentralized, free from interference, and uncensored. It is now well known that one of the defining underlying values of Bitcoin and similar projects is a lack of third party control, making them uncensorable. On its own, this ensures its future as a *trustless* means of exchange.

This begs the question, does an uncensored exchange have any intrinsic value on its own? In this particular case, the answer is even more challenging. For all intents and purposes, the HODL Token is a commodity. As opposed to a currency, it can never be used as a means of payment. It can only be bought and sold from the commodity exchange, the smart contract itself. It has a fair amount of fungibility, whereas any HODL token is as valid as the next to any buyer or seller, but it cannot be transferred.

Many difficult questions lie ahead for this project.
It's common knowledge that incentives to buyers are generally made in the form of price reduction: ponder, what happens if the price in USD can never decrease? Having said that, it should be noted that the Ether digital asset itself can fluctuate.

Other digital assets, such as Stablecoins, can be used as a form of payment or can be transferred, and generally correlated to an underlying asset, such as cryptocurrencies or gold/silver, so the similarity ends there.

In conclusion, this project is a definite challenge to currently accepted laws of economics and does not follow any usual paths taken by a crypto asset such as an Initial Coin Offering, Initial Exchange Offering, or Security Token Offering, widespread marketing, airdrops, and referral schemes, pre-minted tokens, an official organization or even the sacrosanct convention of exchange listing and price fluctuations.

Only time will tell if HODLCommodity's originality could be its doom or its success.

Chapter 11

Conclusion

The Future of Stablecoins and Final Thoughts

CoinTelegraph writes, "*Various models of Stablecoins have surged in popularity last year…research firm Diar published an analysis saying that the adoption of stablecoins is growing based on the increasing number of on-chain transactions. As per the study, the same four major stablecoins to date have broken the $5 billion mark in on-chain transactions within the three-month period.*"[68]

Stablecoins are already considered commodities and traded among crypto exchanges. Naturally, during cryptocurrency market fluctuations, Stablecoins do a better job of holding their value. An example of this was during the largest cryptocurrency market crash of all time in 2018, when many currencies lost 30 to 70 percent of their value. Tether, a USD-backed Stablecoin, held out within 8%.

Most can agree there is a great convenience in a high-quality Stablecoin, allowing the use of fiat on crypto exchanges in today's rapidly changing financial landscape. Stablecoins allow users to be in control of their assets while taking advantage of many positive aspects of a crypto economy.

Crypto- Enthusiasts will argue Stablecoins are not cryptocurrencies on the basis that they're:

1. **Centralized**. Some users aren't sure binding to a traditional banking system can provide a decentralized ecosystem and still retain anonymity to the owner.

2. **Backed by an "illusion.**" Some argue cryptocurrency is "fake money", however, fiat was backed by gold until the 1970's and now has no asset standing behind it.

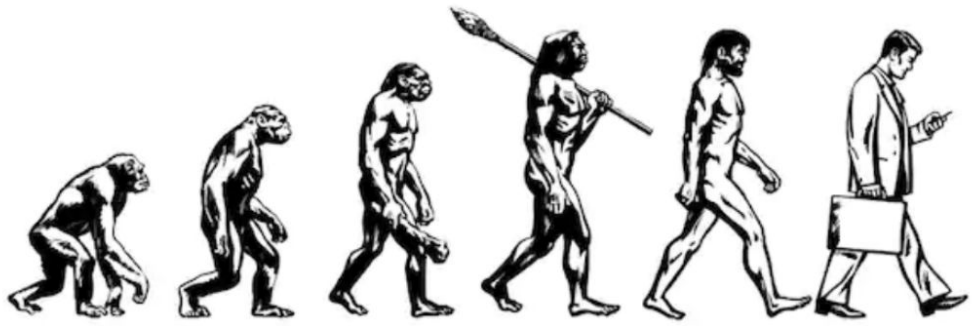
3. **Cryptocurrency represents a unique code written down in memory of an inviolable digital ledger**. Adding a traditional asset often demands special storage conditions, funds for providing these conditions, a third party to audit.

[68]https://cointelegraph.com/news/crypto-trailblazer-nick-szabo-central-banks-could-turn-to-crypto-to-support-reserves

Stablecoins with real-world value assets can be used in everyday life, which opens the floodgates to mass adoption. After a majority use digital cash, say in the form of Stablecoins, the cryptocurrency community can inform the public about the e benefits of decentralization and need for trustless cash exchanges. With digital cash experience, there's less to learn in a new, highly complex, and ever evolving financial technology ecosystem. Crypto-Enthusiasts can't disagree. Stablecoins could be the key to getting more people to use Bitcoin and Altcoins in the future.

In all likelihood Stablecoins will be a critical part of the future, as bridges towards more decentralized digital currencies and in their own right as sensible investment. A wave of Stablecoins may be needed now to encourage adoption and later, perhaps in perpetuity, as useful hedging mechanisms.

Remember when educating, investing and learning; Stablecoins are not intended to be investment vehicles, but safeguards towards the underlying value of the pegged asset.



Stablecoin Economy: Ultimate Guide to Secure Digital Finance

Author

Research, Authorship & Design

Alyze Sam *is a refreshing blockchain strategist, a novel educator, and vehemently driven advocate. First, dedicating her life to her patients in hospice nursing, Sam passionately embraced the world of financial technology after nearly losing her own life, not once, but twice! Sam feels her destiny lies within serving her community and assisting other 'underdogs' with love and education. She's achieving these dreams with roles as; Co-Founder and Chief Executive Assistant for* GIVE Nation*, a non-profit children's financial literacy AI/blockchain project which rewards altruistic behaviors. She's a Founder and Community Director of* Women in Blockchain International *and sits as an 'Social Impact Advisor' for blockchain nonprofits;* Blockchance.eu *&* Women in Blockchain Foundation*. Alyze has been an active participant and speaker in the internationally known* Women in Blockchain *Community. She was one of the original members of Jen Greyson's Blockchain Sisterhood in 2016 and has since befriended a world of talented women in state of the art technology. Sam is a stakeholder and former Director at the '*World Ethical Data Forum*'. Her advisory positions include;* JustiFire*, where they digitally track ammunition,* PAC Global*, a revolutionary payment system,* NewLife.Ai*, a high-end fashion and Tumblr- like social media app with A.I. functions which generate digital rewards, and the* Liberland Foundation Aide*, a country based on the blockchain. Alyze works closely with* Illumnine Corp*,* Illumnine Society*, and* Team McAfee *concentrating on media intelligence, partnerships and tech events. In her free time, Sam writes for 15+ Tech Magazines, while humbly sitting at the top 1% of the Blockchain industry as a FemSTEM mentor and influencer. She's a proud* Alliance of Blockchain Professionals *member, since 2018. Sam wrote the first book on Stablecoins in 2017. The unbiased text takes complex practices and simplifies concepts for most audiences. In February 2020 Sam and her partners '****Complete 2020 Guide to Stablecoins****' sat as the #1 New Release in Business and Money on Amazon Books. *Visuals and self publishing done by a 17-year-old Sam personally mentors: Koosha Azim, Silicon Valley, CA.*

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Contributors

Editor, Contributor and Visionary

Adam Alonzi *is a writer, biotechnologist, documentary maker, programmer, and author of two novels. He has been active in the cryptocurrency community for over seven years. He is the co-founder and CTO of Global Art Gallery, a blockchain IoT project. He is also an analyst for the Millennium Project and Head of New Media for BioViva Sciences.*

Visuals, Contributor and Publisher

Koosha Azim *is 17-year-old blockchain enthusiast, artist, and award-winning author of the 2020 Complete Stablecoin Guide. He advises fintech projects and is an active journalist on koosha.org and Hackernoon. He is also the Director of Technology at the Africa Blockchain University where he has organized 9 blockchain camps within 7 African nations. Endorsed by John Mcafee, Koosha and his co-author Alyze Sam spent years researching the field of Stablecoins and crypto-economics to produce several published content. He is now working with Copper Banking to scale user acquisition, social media traction, and brand growth for teenage audiences. Koosha Azim currently attends West Valley College as a high school student.*

Financial Consultant

Patrick Devereaux *not only retains an impressive financial and accounting background beginning more than a decade ago, he also encompasses a diverse resume of experiences in a variety of industries. Devereaux has successfully collaborated with many CPA firms as a staff accountant while running his own consulting firm and most recently has joined multiple start-ups as "Chief Financial Officer". He sits as an Advisor to several notable tech companies, as he is often requested for investment opportunities and fundraising to support the adaptation of blockchain technology. Patrick's interest in digital currencies dates back to his involvement with one of America's first bitcoin ATMs. His knowledge of tax code and other regulatory bodies has proven its value many times over. Devereaux is responsible for saving multiple companies several millions of dollars in tax liabilities. He spends time educating his clients on best practices, policies and procedures; with a focus on operational longevity. Patrick's hands-on approach can help effectuate a business's vision.*

Privacy Technologist

Jean-Phillipe Beaudet *Experienced Gaming developer, Jean-Philippe Beaudet launched his career at UbiSoft. He worked and researched natural language processing for Luminary, a private American research lab. Beaudet cultivated an interest in machine learning and decentralized technology which led him to co-found S3R3NITY Technologies, a technology incubator from which he launched numerous start-ups. Mr. Beaudet was an early enthusiast of blockchain technology and contributed to major projects such as a Bitcoin brokerage platform and a marketing data analytics tool for financial institutions. Privacy advocate, he is working on a solution to marry privacy with security using decentralized identities and validation. Jean-Philippe is an advisor on multiple blockchain initiatives and a regular conference speaker. He is also the CEO of VSEKUR.*

Business Advisory

Tommy Austin *is the COO and co-founder at Illumnine.corp, he had a humble career beginning in blockchain when he discovered the technology had potential to better impact the planet. Austin has a fascinating background in digital financial starting off as a security guard and support for technology celebrity and gifted inventor, John McAfee. After proving a small town Tennessee native had what it took to 'roll with the big dogs' Ausin took the highly sought after business development director position at Team McAfee. He traveled at McAfee's side and lived in his home, being fully engrossed into the crypto world. He quickly became termed an 'expert', by asking all the right questions and bringing value to many blockchain based businesses. Austin is often asked words of wisdom from his vast experiences, he shares: "Get ready for the next jump in evolution! It's time to be responsible, but don't forget to have fun making a difference". Tommy has been a huge support to others in the crypto industry, as a happy-go-lucky, modest man. When questioned 'who are you?' in business settings, Austin always responds with, "No one. I clean up, so technically, I'm the janitor!"*

Podcasts we've found helpful

Eth Hub
Crypto Confidence
Bad Crypto Podcast
Blockchain Verses
Crypto Rice Show
Rob McNealy Show
Ashton Addison
The Tatiana Moroz Show
Divi Project Podcast
Girl Gone Crypto

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Learn more and help keep me updated on Stablecoins in these places:

Complete & Simple Guide to Understanding Stablecoins here.
https://medium.com/@alyzesam/2019-complete-stablecoin-guide-3f77896fb4ad

Asset-Collateralized coins, also known as, **Fiat-Collateralized Stablecoins** found in my publication here.
https://medium.com/@alyzesam/fiat-collateralized-stablecoins-68a63b042cbb

I also covered **Crypto-Collateralized Stablecoins.** That article can be viewed here.
https://medium.com/@alyzesam/crypto-collateralized-stablecoins-w-complete-guide-74e261f34b1b

Then switched things up a bit and visited the only Non-Collateralized Stablecoin Category, **Seigniorage Supply (Algorithmic) Stablecoin Model**. Enjoy the description of the futuristic currency model here.
https://medium.com/@alyzesam/seigniorage-supply-algorithmic-stablecoins-w-complete-list-e1c98db3b9da

Next? A simple to understand category among a Asset-Collateralized group; **Metal-Collateralized Stablecoins** found here, with a long list of promising projects.
https://medium.com/@alyzesam/a-simple-understanding-to-metal-collateralized-stablecoins-with-2019-complete-guide-626acf59e10d

Lastly, combining asset backed and non collateralized crypto's, we have our **Hybrid Stablecoin Model Category.** View this here.
https://medium.com/@alyzesam/a-simple-understanding-to-hybrid-stablecoins-with-2019-complete-guide-2a9b55af1de2

If you'd like to learn how to "get ahead" with your newfound StableCoin knowledge, visit my very last part of my Ebook here. "**A Guide to Using Stablecoins to Increase & Protect Your Assets."**
https://medium.com/@alyzesam/a-guide-to-using-stablecoins-to-increase-and-protect-your-assets-9fac28be1a5d

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Stablecoins are going to revolutionize banking as we know it. Major banks are jumping on the crypto bandwagon.

KOOSHA AZIM

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Crypto has afforded new opportunities to captial markets, payment solutions, individual identity management, and so on. The advent of stablecoins furthers this mostly by creating tangiblity. Stablecoins are a necessary medium needed to balance the digital and physical worlds, while adding assurance to free market activity.

PATRICK DEVEREAUX

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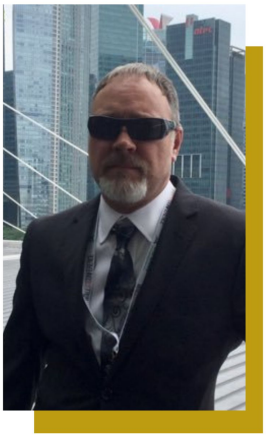
Being closely connected to the crypto world for many years, I can see Stablecoins as a positive addition to the industry.

TOMMY AUSTIN



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Stablecoins may become international currencies. Decentralized and semi-decentralized mechanisms are poised to become the rule, not the exception.

JEAN-PHILIPPE BEAUDET

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