PLAN B

By Andrea Bertame

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Executive Summary

The aim of this document is to educate the reader on the topic of money, so that the reader can understand the discussion on why an individual, a family or business should adopt a Bitcoin standard to ensure their success going forward.

The intent of this paper is to empower any reader with enough context and understanding that the reader, regardless of their previous knowledge in this topic, after reading, they will feel comfortable conversing on this subject in future settings.

The author believes that we have entered a period in time where a technology called Bitcoin has changed the way we will look at money forever.

In Part 1, the paper will delve into the definition of money, its characteristics and functions, as well as the impact it has had on society.

Part 2 will examine the history of money and its evolution through three phases: commodity money, gold standard and fiat currency.

Part 3 will examine the fourth phase, digital money with a focus on Bitcoin.

Part 4 will examine how Bitcoin compares as an investment vehicle to real estate, and explores the defects to real estate property that are not found in Bitcoin.

Part 5 will examine how Bitcoin compares to equity as an investment vehicle, and explores the risks of equity that are not found in Bitcoin.

Part 6 will explore the advantages a company can gain by adopting Bitcoin.

Finally, in Part 7 are the closing comments on Bitcoin.

Forward

Technology is continuously changing the way we live, a person born 100 years ago has more in common with a person living 1000 years ago then with us today, this is mainly due to technological changes.

Let's explore how the transportation industry has been changed by technology. The advent of the locomotive in the 19th century marked the beginning of the end for horses as the primary mode of transportation. The steam-powered engine revolutionized travel and commerce, allowing for faster and more efficient transportation of goods and people. The railway network quickly spread across the world, and trains became the primary means of long-distance travel. As a result, horses were no longer needed in such large numbers for transportation and many were retired from service.

- In the mid-1800's travel from Winnipeg to Vancouver was 4 months by covered wagon and about 2 months by horse.
- In the late 1800 the same trip by Train was about 3 days.
- By the 1950's aircraft brought the time down to 8 to 10 hours.

This demonstrates the changes brought about by technology in the transportation sector.

Today, we see a similar transition happening to our world this time technology is changing our money, in fact, Nikola Tesla, Henry Ford, Buckminster Fuller, among others all predicted this in the 20th century. These individuals understood that they came from the ancient world into the modern world, and that the modern world would eventually move to a future world.

To move from the modern industrial age to the information age humanity would need to create a global network of energy, where we would be able to transition natural wealth into global units of energy, also humanity would have to build some system that could turn that energy into information, and send that information all over the globe, and finally the information needed to be turned into energy.

THE INFORMATION AGE			
	LAYER	**NETWORK**	**FUNCTION**
I	ENERGY	ELECTRIC GRID	PROVIDES POWER TO THE SYSTEM
II	INFORMATION	COMPUTER	MODE OF INPUT/CONNECTION
III	COMMUNICATION	INTERNET	MODE OF TRANSFER
IV	MONETARY	BITCOIN	MONEY OVER INTERNET

In the early 20th century, the development of the Electric Grid, which provided the ability to globally convert natural wealth into energy in the form of electricity, which kickstarted the transition into this future world by creating the first layer of the new age.

In 1948, computers were created, which allowed the conversion of energy into information, and finally in 1983 we created the internet, which is a network to communicate data from computers around the globe.

In 2009, the Bitcoin was created. Bitcoin is an algorithm that uses the communication network of the internet, converts natural wealth into energy, through computers into an immutable ledger, essentially, it's the next layer of the information age.

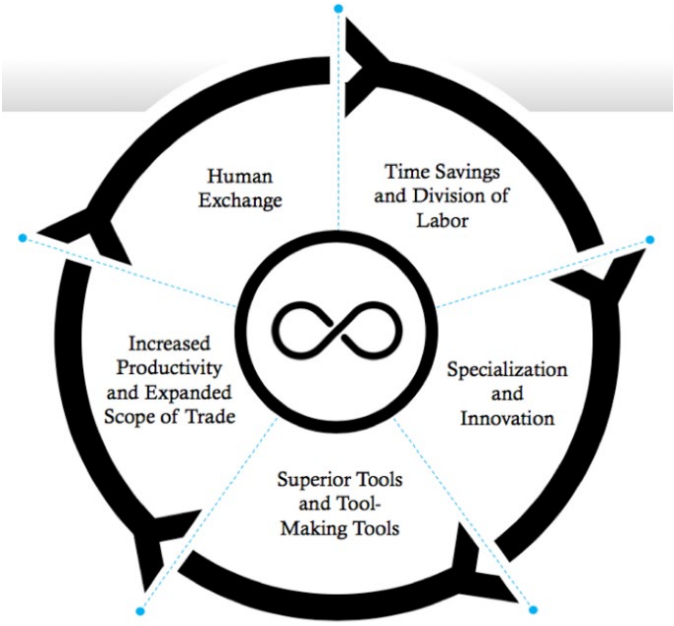
Part 1 What is Money?

This section looks at how the concept of money originated, the rise of money and covers the core properties and functions of what we call money.

This section is predicated on Robert Breedlove work on what is money, for those that prefer to watch a video instead of reading this section please start here. https://youtu.be/J4IylYhh6Vw

Origins:

Simply put we have four things we can do with our resources: consume, save, invest, or share.



- **Consume:** When we consume, we meet our immediate needs and desires, including shelter, food, and entertainment.
- **Save:** When we save, we store our resources in something that is safe, liquid, and portable, a.k.a. money. This serves as a low-risk battery of future resource consumption across time and space.
- **Invest:** When we invest, we commit resources to a project that has a decent likelihood of multiplying our resources but also comes with a risk of losing them, by trying to provide some new value to ourselves or others. This serves as a higher-risk, less-liquid, and less-portable amplifier of future resource consumption potential compared to money. There are personal investments, like our own business or education, and there are external financial investments in companies or projects led by other people.
- **Share:** When we share, or in other words give to charity and those in our community, we give some portion of our excess resources to those that we deem to be needing and deserving. In many ways, this can be considered a form of investment in the ongoing success and stability of our larger community, which is probably why we are wired to want to do it.

Humans are the networked species. When we began to exchange with one another, we intuitively discovered the *division of labor* which allows people to focus on their relative advantages and concentrate on their chosen craft. The division of labor enables the *specialization* of productive efforts for mutual gain.

Tools, or technologies, are mechanisms that increase *productivity* by amplifying the returns on human time directed at production. As people made and exchanged more tools, time savings increased and specialization deepened. Specialization sparked innovation, because it encouraged the investment of time in producing tools. This enabled people to create superior tools, which increased productivity even further.

This recursive dynamic persists to this day (as shown in the figure here) as a virtuous cycle with no known natural limit.

Modern markets in goods, services and ideas allow human beings to exchange and specialize honestly for the betterment of all. In this way, the act of exchange is the incipient force driving all human progress and *prosperity*. Prosperity is simply time saved, which is proportional to the division of labor:

Barter occurred throughout the world in various contexts going back tens of thousands of years or more. Eventually, humans began to develop concepts and technologies that allowed them to abstract that process. The more complex an economy becomes, the greater the number of possible combinations of barter you can have between different types of goods and services providers, so the economy starts requiring some standard unit of account, or money. Specifically, the society begins requiring something divisible and universally acceptable.

The 3 Functions of Money

Larger groups of people exchanging goods mean larger markets, but also creates a problem of ***non-coincidence of wants*** — what you are seeking to acquire by trade is produced by someone who doesn't want what you have to offer. This problem has three distinct dimensions:

1. Non-coincidence in Scales — imagine trying to trade pencils for a house, you cannot acquire fractions of a house and the owner of the house may not need such a large amount of pencils

2. Non-coincidence of Locations — imagine trying to trade a coal mine in one place for a factory in another location, unless by coincidence you are seeking a factory in that exact location and the counterparty you are dealing with is seeking a coal mine in that precise place, the deal will not be completed since factories and coal mines are not movable

3. Non-coincidence in Time Frames — imagine trying to accumulate enough oranges to trade for a truck, since the oranges are perishable, they would likely rot before the deal could be completed

The only way to resolve this three-dimensional problem is with *indirect exchange,* where you seek to find another person with a good desired by the counterparty and exchange your good for theirs only to, in turn, exchange it for the counterparty's good to complete the deal. The intermediary good used to complete the deal with the counterparty is called a *medium of exchange* - **the first function of money**.

Over time, people tend to gradually converge on a single medium of exchange (or, at most, a few media of exchange) as it simplifies trade. A good that becomes widely accepted as a medium of exchange is commonly called money.

Money offers its users pure optionality, as it can be readily exchanged for any good available in the marketplace. In other words, money is the most liquid asset within a trade network. In this sense, money is said to have the highest *salability*, meaning the ease with which it can be sold on the market at any time with the least loss in price.

Salability of a good is relatively determinable by how well it addresses the three dimensions of the non-coincidence of wants problem:

1. Salability across Scales — a good that is easily subdivided into smaller units or grouped together in larger units, which allows the user to trade it in whatever quantity desired

2. Salability across Space — a good that is easily transported or transmitted over distances

3. Salability across Time — a good that can reliably hold its value into the future by being resistant to rot, corrosion, counterfeit, unpredictable increases in supply and other debasements of value

It is the third element, salability across time, that determines a good's utility as a *store of value* — **the second function of money**. Since the production of each new unit of a monetary good makes every other unit relatively less scarce, it dilutes the value of the existing units in a process known as *inflation*. Protecting value from confiscation via inflation is a critical feature of money, and money is critical to the existence of flourishing trade networks.

In economics, a critical aspect of human decision making is called *time preference*, which refers to the ratio at which an individual values the present relative to the future. Time preference is positive for all humans, as the future is uncertain, and the end could always be near. Therefore, all else being equal, we naturally prefer to receive value sooner rather than later. People who prefer to defer current consumption and instead invest for the future are said to have a lower time preference. The lowering of time preference is closely related to the hardness of money and is also exactly what enables human civilization to advance and become more prosperous. In regard to time preference, hard money is important in three critical aspects:

- By providing a reliable way to protect value across time, hard money incentivizes people to think longer term and thus lowers their time preferences
- As a stable unit of measurement, hard money enables markets to grow ever-larger by reducing the costs and risks of free trade, thereby increasing incentives for long-term cooperation and lowering time preferences
- Self-sovereign money (like gold and Bitcoin) that cannot be manipulated by any single party reduces governmental intervention which encourages the growth of free markets, which increases their long-term stability and lowers time preferences

The foundation of all economic growth is delayed gratification, which leads to savings, which leads to investment, which extends the duration of the production cycle and increases productivity in a self-sustaining, virtuous cycle with no known natural limit." – Robert Breedlove

When a form of money becomes globally dominant, it finally **serves the third function of money** — *unit of account*. History shows us that this function is the final evolutionary stage in the natural ascendancy of monetary goods that achieve a dominant role —

which are first a store of value, then a medium of exchange and finally a unit of account.

Money, especially types of money that take work to produce, often seems arbitrary to outsiders of that culture. But that work ends up paying for itself many times over, because a standardized and credible medium of exchange and store of value makes all other economic transactions more efficient.

The attributes of a good store of value – the most salable good

When stores of value compete against each other, it is the specific attributes that make a good store of value that allows one to out-compete another at the margin and increase demand for it over time.

While many goods have been used as stores of value or "proto-money", certain attributes emerged that were particularly demanded and allowed goods with these attributes to out-compete others.

An ideal store of value will be:

- Durable: the good must not be perishable or easily destroyed. Thus, wheat is not an ideal store of value
- Portable: the good must be easy to transport and store, making it possible to secure it against loss or theft and allowing it to facilitate long-distance trade. A cow is thus less ideal than a gold bracelet.
- Fungible: one specimen of the good should be interchangeable with another of equal quantity. Without fungibility, the coincidence of wants problem remains unsolved. Example, if a friend lends you $20, when you give him back the money you don't need to return the exact bills he gave you, they just need a sum that equates to $20 back.
- Verifiable: the good must be easy to quickly identify and verify as authentic. Easy verification increases the confidence of its recipient in trade and increases the likelihood a trade will be conducted.
- Divisible: the good must be easy to subdivide. While this attribute was less important in early societies where trade was infrequent, it became more important as trade flourished and the quantities exchanged became smaller and more precise.
- Scarce: As Nick Szabo termed it, a monetary good must have "unforgeable costliness". In other words, the good must not be abundant or easy to either obtain or produce in quantity. Scarcity is perhaps the most important attribute of a store of value as it taps into the innate human desire to collect that which is rare. It is the source of the original value of the store of value.
- Established history: the longer the good is perceived to have been valuable by society, the greater its appeal as a store of value. A long-established store of value will be hard to displace by a new upstart except by force of conquest or if the arriviste is endowed with a significant advantage among the other attributes listed above.

- Censorship resistant: a new attribute, which has become increasingly important in our modern, digital society with pervasive surveillance, is immutability or censorship-resistance. That is, how difficult is it for an external party such as a corporation or state to prevent the owner of the good from keeping and using it. Goods that are censorship-resistant are ideal to those living under regimes that are trying to enforce capital controls or to outlaw various forms of peaceful trade.

Summing those attributes together, money is the "**most salable good**" available in a society, meaning it's the good that is the most capable of being sold. Money is the good that is most universal, in the sense that people want it, or realize they can trade for it and then easily and reliably trade it for something else they do want.

Money, as an expression of value, has remained conceptually constant but has evolved to inhabit many different goods over time. Like language, which was first spoken, then written and now typed, the meaning expressed by money remains the same while its modality continually evolves. As the monetary technologies we use to express value change, so too do our preferences.

Money is a Social Network

Money represents a belief system which connects people across space and time, simply put money is the original and largest social network.

The value of a network is a reflection of the total number of possible connections it allows. Similar to the telephone and modern social media platforms, a monetary network becomes exponentially more valuable as more people join it because the number of possible connections it allows increases proportionally to the square of the number of its total network participants, a relationship defined by *Metcalfe's Law*:

In a monetary network, more possible connections mean more salability and a broader scope of trade. Participants in a monetary network are connected by their use of a common form of money to express and store value.

Network effects, defined as the incremental benefit attained by adding a new member to a network for all existing members in that same network, encourage people to **adopt a single form of money**. Intuitively, a monetary good that holds value across time (hard money) is always preferable to one that loses value (soft money).

This causes people to naturally gravitate to the hardest form of money available to them. Further, since human exchange is a singular communal phenomenon suffering from a three-dimensional non-coincidence of wants problem, any monetary good that can solve all three dimensions of this problem will win the entire (or vast majority) of the market.

For these reasons, a free market for money exhibits **a *winner take all*** (or, at least, a winner takes most**) *dynamic***. Network effects accelerate people's natural coalescence around a single monetary technology since larger monetary networks support higher salability of the monetary good involved.

Now that we have gone over why a society needs money, what it is, its properties, its functions and how it behaves, let's explore the evolution of money in modern times.

Part 2 - Evolution of Money

In this section, we will examine the evolution of money and analyze the current phase of transformation in the definition of money. To simplify, the world has gone through three main stages: commodity money, gold standard, and fiat currency.

Commodity money

Throughout history various stones, beads, feathers, shells, salt, furs, fabrics, sugar, coconuts, livestock, copper, silver, gold, and other things have served as money. They each have different scores for the various attributes of money, and tend to have certain strengths and weaknesses.

Different monetary technologies are in constant competition for the belief and trust of people. Believability and trustworthiness form the basis of *social consensus* — the source of a particular monetary good's sovereignty from which it derives its market value along with the trust factors and permissions necessary to transact with it.

Salt for example is divisible, durable, verifiable, fungible, and has important utility, but is not very valuable per unit of weight and not very rare, so doesn't score very well for portability and scarcity.

Gold is the best among just about every attribute, and is the commodity with by far the highest stock-to-flow ratio. The one weakness it has compared to other commodities is that it's not very divisible. Even a small gold coin is more valuable than most purchases, and is worth as much as most people make in a week of labor. It's the king of commodities.

The rise of Gold

Back in 1912, Mr. J.P. Morgan testified before Congress and is quoted as having said the famous line:

"Gold is money. Everything else is credit."

In other words, although their terms often overlap, currency and money can be thought of as two different things for the purpose of discussion.

We can define currency as a liability of an institution, typically either a commercial bank or a central bank, that is used as a medium of exchange and unit of account. Physical paper dollars are a formal liability of the US Federal Reserve, for example, while consumer bank deposits are a formal liability of that particular commercial bank (which in turn hold their reserves at the Federal Reserve, and those are liabilities of the Federal Reserve as well).

In contrast to currency, we can define money as a liquid and fungible asset that is not also a liability. It's something intrinsic, like gold. It's recognized as a highly salable good in and of itself. In some eras, money was held by banks as a reserve asset in order to support the currency that they issue as liabilities. Unlike a dollar, which is an asset to you but a liability of some other entity, you can hold gold which is an asset to you and a liability to nobody else.

Under gold standard systems, currency represented a claim for money. The bank would pay the bearer on demand if they came to redeem their banknote paper currency for its pegged amount of gold.

Scarcity is often what determines the winner between two competing commodity monies. However, it's not just about how rare the asset is. A good concept to be familiar with here is the stock-to-flow ratio, which measures how much supply there currently exists in the region or world (the stock) divided by how much new supply can be produced in a year (the flow).

This is the fatal flaw of *soft money*: anything used as a store of value that can have its supply increased will have its supply increased, as producers seek to steal the value stored within the soft monetary units and store it in a harder form of money. Any monetary good which can have its supply cheaply and easily increased will rapidly destroy the wealth of those using it as a store of value.

On the other hand, if a commodity is so rare that barely anyone has it, then it may be extremely valuable if it has utility, but it has little useful role as money. It's not liquid and widely-held, and so the frictional costs of buying and selling it are higher. Certain atomic elements like rhodium for example are rarer than gold, but have low stock-to-flow ratios because they are consumed by industry as quickly as they are mined. A rhodium coin or bar can be purchased as a niche collectible or store of value, but it's not useful as societal money.

For a good to assume a dominant monetary role within an economy, it must exhibit superior hardness with a higher stock-to-flow ratio than competing monetary goods. Otherwise, excessive unit production will destroy the wealth of savers and the incentives to use it as a store of value. Particular goods achieve monetary roles based on the interplay of people's decisions. It is from the chaos of complex human interactions that monetary orders emerge. Therefore, it is important to consider the social aspects of the spontaneous emergence of monetary orders.

Global Gold Standard

After thousands of years, two commodities beat all of the others in terms of maintaining their monetary attributes across multiple geographies; gold and silver. Only they were able to retain a high enough stock-to-flow ratio to serve as money, despite civilizations constantly improving their technological capabilities throughout the world over the ages.

However, despite all of our technological progress, we still can't reduce the stock-to-flow ratios of gold and silver by any meaningful degree, except for rare instances in which the developed world found new continents to draw from. Gold has maintained a stock-to-flow ratio averaging between 50 and 100 throughout modern history, meaning we can't increase the existing supply by more than about 2% per year, even when the price goes up more than 10x in a decade. Silver generally has a stock-to-flow ratio of 10 to 20 or more.

Basically, whenever any commodity money came into contact with gold and silver as money, it was always gold and silver that won. Between those two finalists, gold eventually beat silver for more monetary use-cases, particularly in the 19th century.

Improvements in communication and custody services eventually led to the abstraction of gold. People could deposit their gold into banks and receive paper credit representing redeemable claims on that gold. Banks, knowing that not everyone would redeem their gold at once, went ahead and issued more claims than the gold they held, beginning the practice of fractional reserve banking. The banking system then consolidated into central banking over time in various countries, with nationwide slips of paper representing a claim to a certain amount of gold.

With all of the critical salability characteristics gathered under a gold standard monetary system facilitated by paper bank notes, the superior salability across scales of physical silver lost relevance, setting it up to become demonetized (due to the winner take all dynamic discussed earlier).

Final Settlement

Gold also has the advantage of being an instrument of *final settlement*. Whereas the use of government money requires trust in the monetary policy and creditworthiness of the issuing authority or payment intermediaries, known as *counterparty risk*, the act of physically possessing gold comprises all of the trust factors and permissions necessary to use it as money. This makes gold a self-sovereign form of money. This is best understood as an identity of the universal accounting equation: Assets = Liabilities + Owner's Equity

When you own gold free and clear, it is your asset and no one else's liability, meaning that your personal balance sheet includes a 100% gold asset matched by 0% liabilities and 100% owner's equity (since no one else has a claim on your gold asset). This makes gold a *bearer instrument*, **meaning that any individual in physical possession of the asset is presumed to be its rightful owner**. This timeless and trustless nature of gold is the reason why it still serves as the base money and final settlement system of central banks worldwide.

In the 19th century, the term *cash* referred to central bank gold reserves, which was the dominant self-sovereign monetary good at the time. Cash settlement referred the transfer of physical gold between central banks to execute final settlement. Central banks can only settle with finality in physical gold, and still do so periodically in the modern era, since it is the only form of money that requires no trust in any counterparty, is politically neutral and gives its holders full sovereignty over their money. This is why

gold maintains its monetary role even today as only the delivery of a bearer instrument can truly be the final extinguisher of debt.

In this original sense of the word cash, gold is the only form of dominant cash money that has ever existed (although Bitcoin is well-suited to serve a similar role in the digital age, more on this later). Unfortunately, the combination of gold's self-sovereignty and physicality would lead to the demise of the gold standard.

A far too common story of monetary debasement: Monetary Metals

The last dictator of the Roman Republic, Julius Caesar, issued a gold coin called the aureus coin which contained a standard 8 grams of gold. The aureus was traded widely across Europe and the Mediterranean, alongside a silver coin called the denarius, which was used for its superior salability across scales. Used together, these coins provided a hard money system that increased the scope of trade and specialization in the Old World. The republic became more economically stable and integrated for 75 years until the infamous emperor Nero came into power.

Nero was the first to engage in the act of *coin clipping* in which he would periodically collect the coins of his citizenry, melt them down and mint them into newer versions with the same face value but less precious metal content, keeping the residual content to enrich himself. Similar to modern day inflation, this was a way of surreptitiously taxing the population by debasing its currency. Nero and successive emperors would continue the practice of coin clipping for several hundred years to finance government expenditures:

Citizens gradually wised up to this deceit and began hoarding the coins with higher precious metal content and spending the debased coins, as they were legally required to be accepted at face value in settlement of debts, one of the earliest instances of *legal tender* laws being implemented. This had the effect of driving up the price of coins with higher precious metal content and driving down the price of those with less — a dynamic that came to be known as *Gresham's Law*: bad money (soft money) drives good money (hard money) out of circulation.

Abolishing the Gold Standard - Rise of Fiat Currencies

By 1914, most of the major economies had begun printing money is excess of their gold reserves at the onset of World War I.

Unsurprisingly, this had many negative consequences, some of which were immediate while others came on more slowly. Eliminating the gold standard immediately destabilized the unit of account by which all economic activity was assessed. Government currency exchange rates would now float against one another and become a source of economic imbalance and confusion.

Today, the US Dollar is not redeemable for anything and its value is derived solely from government decree. (This is shown by the image below, "this note is legal tender")

Paradoxically, people were coerced into adopting soft government fiat money only because of their shared belief in gold as a hard monetary good.

Fractional Reserve Banking

Carrying and transacting with paper bank notes backed by gold was much easier than using actual gold. Offering superior utility and convenience, the use of bank notes flourished. This, along with government programs to confiscate gold from citizens (such as Executive Order 6102 in the United States), encouraged the centralization of gold supplies within bank vaults all over the world.

Incapable of resisting the temptation of wealth expropriation by tampering with the money supply, banks soon began issuing more notes than their gold reserves could justify, thus initiating the practice of *fractional reserve banking*. This banking model facilitated the creation of money without any skin in the game. Governments took notice and began to gradually take over the banking sector by forming central banks, as this model enabled them to engage in *seigniorage*, a method of profiting directly from the *money creation process*:

In fractional reserve banking artificial money and credit is created. For instance, assuming a reserve ratio of 10% and an initial deposit of $100 will soon turn into $190. By lending a 90% fraction of the newly created $90, there will soon be $271 in the economy. Then $343.90. The money supply is recursively increasing, since banks are literally lending money they don’t have. In this way, banks are able to transform $100 into over $1,000.

The ability to control this process was too tempting for governments to resist. Total control over the money supply gave those in charge a mechanism to continually extract wealth from its citizenry. The virtually unlimited financial wealth the printing press provided gave those in power the means to silence dissent, finance propaganda and wage perpetual warfare. It is a fundamental economic reality that wealth cannot be generated by tampering with the money supply, it can only be manipulated and redistributed. Civilization itself relies on the integrity of the money supply to provide a solid economic foundation for free trade and capital accumulation. With a firm grip on the prevailing monetary order established, the next logical step for central banks was to begin moving away from the gold standard altogether.

Failure of Government Fiat Money

Seeing that governments have been forced to use coercive measures, such as confiscating gold and implementing legal tender laws, to enforce adoption of fiat money is a clear indication that soft money is inferior and doomed to fail in a free market. This severe inadequacy of government fiat money came to the forefront of global consciousness in the wake of the Great Recession that began in 2008.

Due to gigantic market distortions driven by artificially low interest rates and credit ratings agencies with no skin in the game, US subprime real estate became the largest bubble in modern history. When it burst, its affects were globally systemic, and central banks all over the world (predictably) began increasing their money supplies in an attempt to reflate their broken economies.

Instead of calling it what really is, central banks now deceptively refer to the act of printing money as *quantitative easing.* As we have learned, increasing the money supply creates no real economic value, it only causes market distortions and furthers the misallocation of capital. Injecting liquidity into an economic system experiencing a recession only provides illusory, temporary relief. Printing money delays and exacerbates the inevitable correction, as economic reality cannot be postponed forever. Despite economic reality, central bank market manipulation is worse than ever.

One of the results of fiat currency, especially towards the later stages of this five-decade experiment since the 1970s, is that more people have begun to treat cash like a hot potato. We instinctively monetize other things, like art, stocks, home equity, or gold. The ratio of home prices to median income has gone up a lot, as well as the ratio of the S&P 500 to median income, or a top-notch piece of art to median income.

This chart shows the loss of purchasing power of the U.S. dollar since the Coinage Act of 1792, which is when the US dollar and the US Mint were created:

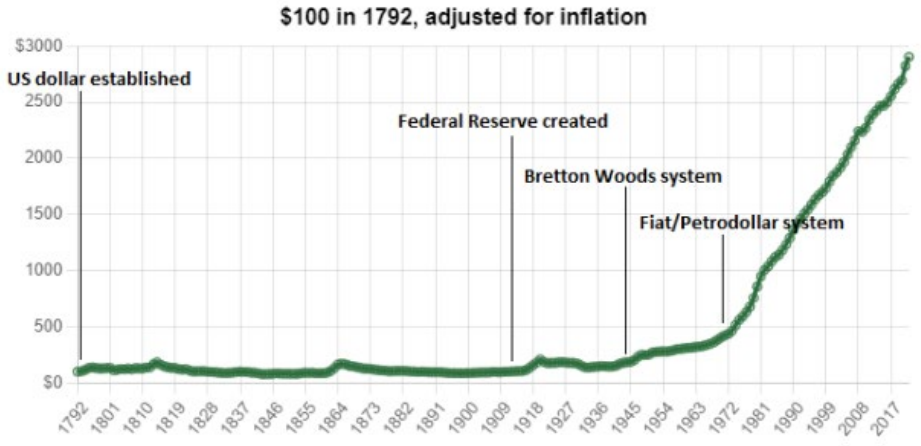
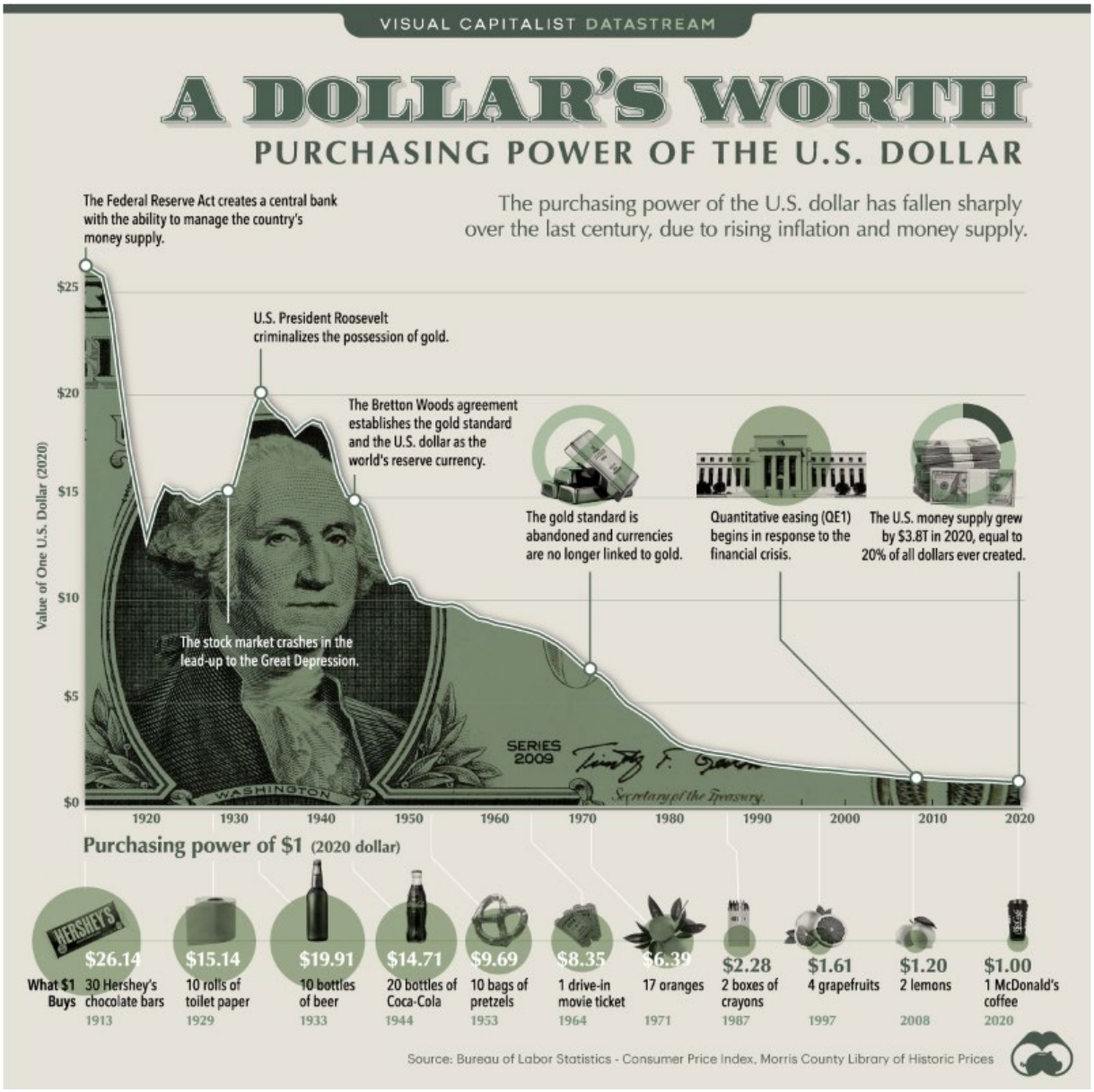


Chart Source: Ian Webster, annotated by Lyn Alden

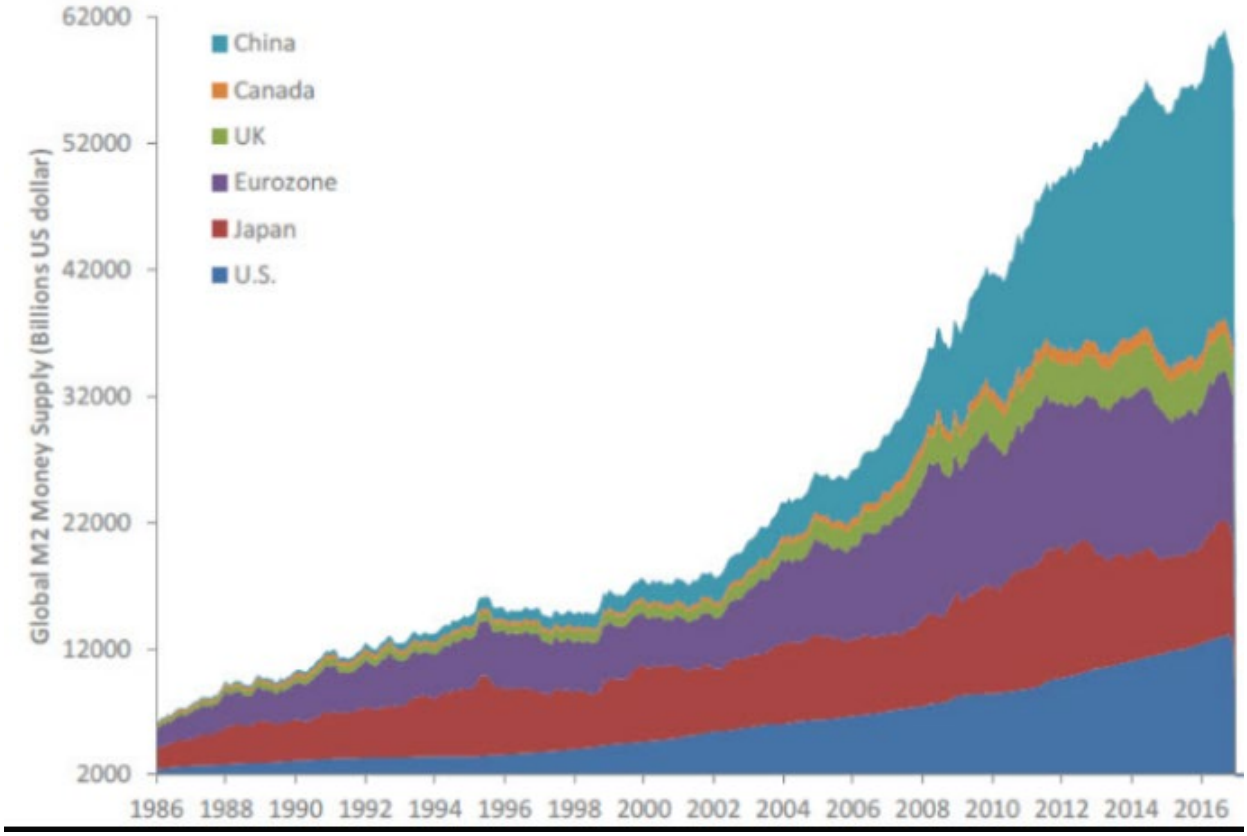
It currently takes nearly $3,000 to have as much purchasing power as $100 bought in 1792. From 1792 to 1913, the dollar's purchasing power oscillated mildly around the same value, with over 120 years of relative stability. From 1913 onward, the policy

changed and the dollar has been in perpetual decline, especially after it completely dropped the gold peg in 1971.



And it's actually worse today than during most of this 1971-2022 fiat/petrodollar period, because interest rates aren't keeping up with inflation rates anymore. The fiat system is getting less stable due to so much debt being in the system, which disallows policymakers from raising interest rates higher than the prevailing inflation rate.

Here we show the amount of government fiat money printed by the largest economies of the world since 1986:



Fiat Summarized

“Abundance in money creates scarcity everywhere else, as opposed to, scarcity in money creates abundance everywhere else” – Jeff Booth

Overall, the key feature or bug of fiat currency (depending on how you look at it) is its flexible supply and its ability to be diluted. It allows governments to spend more than they tax, by diluting peoples’ existing holdings. With this feature, it can be used to re-liquify seized-up financial situations, and stimulate an economy in a counter-cyclical way. In addition, its volatility can be minimized compared to commodity monies most of the time through active management, in exchange for ensuring gradual devaluation over time.

When things go wrong, however, fiat currency can lose value explosively. Fiat currency tends to incentivize running bigger deficits (since spending doesn’t necessarily need to be taxed for), and generally requires some degree of hard or soft coercion in order to get people to use it over harder monies, although that coercion is often rather invisible to most people most of the time, until things go wrong. And its ability to be diluted can allow for longer wars, selective bailouts for influential groups, and other forms of government spending that aren’t always transparent to citizens.

Since 1920, at least 55 hyperinflation events have taken place that have destroyed savings and creating economic hardship. Such events generally result from the mismanagement of financial systems and the economy by central governments.

Closing thoughts on Money

Breakthroughs, that create incremental change in our lives for the better, invariably come from something that most people couldn't see. Our belief of how the world should exist and operate is shaped from looking backwards, not forward, so it makes sense that new paradigms that change everything face resistance in our minds.

Because most people don't see them, breaking through an existing paradigm needs to provide enough compelling value for users to disrupt an old paradigm. Apple's iPhone for instance, didn't copy the market leader, Research In Motion's Blackberry design of needing a keyboard or selling to businesses who required RIM's security. It created a digital interface when that wasn't 'needed' and created an entirely new platform that changed the industry as a result. Along the way, the Blackberry died, unable to compete with the value for users, that was now increasing exponentially on Apple's platform.

That process describes "Creative Destruction" a paradoxical term first coined by Joseph Schumpeter in 1942 to describe how Capitalism works in a "free market." Entrepreneurs innovate and "create" value for society — and that value gained by society also often "destroys" the former monopoly power. That process and its importance is at the centre of how all modern economies have evolved and given rise to most of the benefits to society we take for granted today. New winners become so valuable that they disrupt existing market power or structures.

Unfortunately, preventing failure has been the policy makers tool for the last 20 years and it has enormous consequences. By socializing losses and preventing failure in our economies, central banks and governments have all but ensured that the existing monetary system of the world collapses — and is replaced by something new. In other words, by preventing failure in economies in the short term, Creative Destruction has only moved — now to the level of our international economic system.

"You need this near-death experience, this mortality event, before you can begin to except a new idea. – Michael Saylor"

It was in the depths of the Great Recession that an anonymous individual named Satoshi Nakamoto introduced the open-source software project called Bitcoin. This event is symbolic as it represents a creative destruction event for our modern monetary system. Bitcoin offers the world an alternative – a sound monetary system outside the control of governments and central banks.

"I believe with what is to come, Bitcoin has a higher-than-average probability of overcoming all barriers and becoming a global reserve currency. More importantly, I believe it gives humanity its best chance for a peaceful transition to the future. A world where the abundance gained from our technological progress is more widely distributed. It is not hyperbole to say that almost everything changes as a result of this innovation." – Jeff Booth

Part 3 - Digital Money – The Rise of the Bitcoin Standard

This section explores the 21st century version of money - Bitcoin, exploring economic, legal, ethical and technical reasons for its success, furthermore this section explains the current state of the industry, and what is next to come.

Why Bitcoin?

Everyone in the world is facing inflation, everyone in the world is facing counterparty risk, everyone all over the world they are losing faith in governments, banks, and currencies.

So, in a world where you can't trust anybody, how do store value over-time? If a group of people wanted to collectively save money over time, how do you build a community bank in a world without trust?

You create a bank that is not run by people, that is not subject to any government, that is incorruptible.

You don't put anybody in charge of it, you don't put any family in charge of it, instead you write a piece of software, everyone checks the software, you verify the software (agreement that the software is honest), you put the software on computer, you run it on a network of computers, and everyone run the software on their own computer, and we agree to not change the software, and anybody that tries to change the software gets kicked out of the network.

Bitcoin is an honest approach on reaching a resolution when you can't rely on anybody (not the government, not the bank, not any family, not any individual) what we rely on is the collective self interest of rational people over time with regard to the network.

Problem Solved by Bitcoin

For the first time in the history of the human race we develop a technology to maintain a shared ledger without a trusted counterparty so for thousands and thousands of years. If you wanted to actually keep track of transactions you had to have a bank or a merchant that kept the books and the whole idea of Satoshi's was: What if we didn't have to trust a bank, or trust a bookkeeper, what if we actually all shared the books and we did it in a decentralized fashion?

No one had been able to figure out how to do that until Satoshi Nakamoto offered up "Nakamoto consensus"

The Nakamoto consensus is a decentralized consensus mechanism that is used to confirm the transactions on the Bitcoin network.

Why is this important? – The Double Spend problem

The double spend problem is a potential issue in digital currency transactions, where a user could potentially spend the same digital currency twice. This is a problem because, unlike physical currency, digital currency can be easily copied and spent multiple times.

For example, imagine Alice has a digital coin and she wants to send it to Bob. If Alice were able to make a copy of the coin and send it to Bob, while keeping the original coin

for herself, she would have effectively spent the same coin twice. This would be equivalent to Alice giving Bob a physical dollar bill, but keeping a copy of the bill for herself and being able to spend it again.

In the case of Bitcoin, the consensus mechanism is called Nakamoto consensus, also known as Proof of Work (PoW). To prevent the double-spend problem, The Nakamoto consensus relies on a network of miners to validate transactions and add them to the blockchain. Specialized computers called “miners” compete to validate transactions by solving complex mathematical problems, and the first miner to solve the problem gets to add the next block of transactions to the blockchain. The solution to the mathematical problem serves as proof that the miner has done the necessary work to validate the transactions.

The Nakamoto consensus ensures that the blockchain is secure and that the rules of the Bitcoin network are followed. It also ensures that there is no central authority controlling the network, as all participants are required to follow the same rules.

When a user wants to make a transaction, the transaction is broadcast to the network and the nodes (the computers on the network) work to verify that the user has the necessary funds and that the funds have not already been spent. Once the transaction has been verified, it is added to the blockchain.

This process helps to ensure the integrity of the Bitcoin network and prevent the double spend problem by making it difficult for users to fraudulently spend the same coins multiple times.

What is Bitcoin?

Simply put, Bitcoin is an Immutable, incorruptible, computer network.

Bitcoin is a technology, a social network that enables individuals with an internet connection to exchange information with anyone, anytime, anywhere in the world in a safe and secure way in and through cyberspace.

“Bitcoin is the first, global, private, digital, rule-based monetary system” – Cathie Wood

Bitcoin is a decentralized digital currency that uses cryptography to secure financial transactions and to verify the transfer of assets. It was the first cryptocurrency to be created, and it has been designed to operate as a global, private, and rule-based monetary system. It was created in 2009 by an unknown individual or group of individuals under the pseudonym "Satoshi Nakamoto."

Bitcoin allows for online payments to be sent directly from one party to another without going through a financial institution. Bitcoin is a global currency, meaning that it can be used to make transactions around the world. The Bitcoin network is based on blockchain which serves as a record of all Bitcoin transactions. The blockchain is maintained by a decentralized network of computers, known as "miners," which work to validate and add new transactions to the ledger.

Bitcoin is a rule-based monetary system, meaning that it operates according to a set of predetermined rules that are encoded into the software that runs the network. These

rules ensure that the currency is fair, transparent, and predictable, and they help to maintain the integrity of the system.

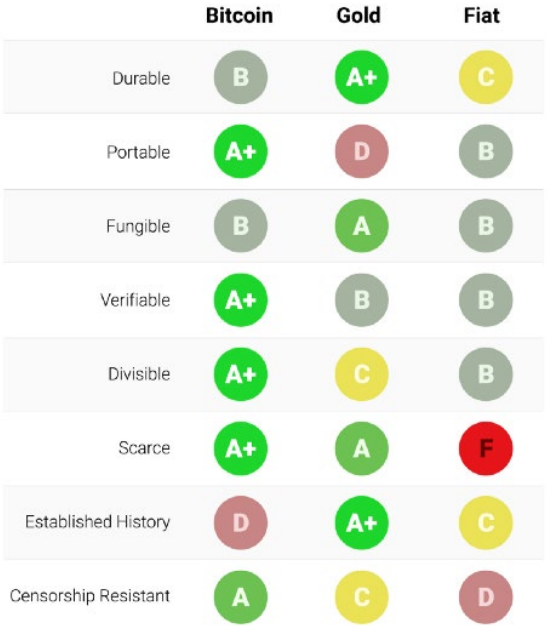
Overall, Bitcoin is a ground-breaking innovation that has the potential to revolutionize the way we think about and use money. By combining elements of decentralization, privacy, global accessibility, and rule-based governance, it has created a new type of monetary system uniquely suited to the digital age.

Properties of Bitcoin

The following is a quote for Satoshi Nakamoto in 2010 on Bitcoin:

> "As a thought experiment, imagine there was a base metal as scarce as gold but with the following properties:
>
> – boring grey in colour
> – not a good conductor of electricity
> – not particularly strong, but not ductile or easily malleable either
> – not useful for any practical or ornamental purpose
>
> and one special, magical property:
> – can be transported over a communications channel
>
> If it somehow acquired any value at all for whatever reason, then anyone wanting to transfer wealth over a long distance could buy some, transmit it, and have the recipient sell it."
>
> -Satoshi Nakamoto, 2010

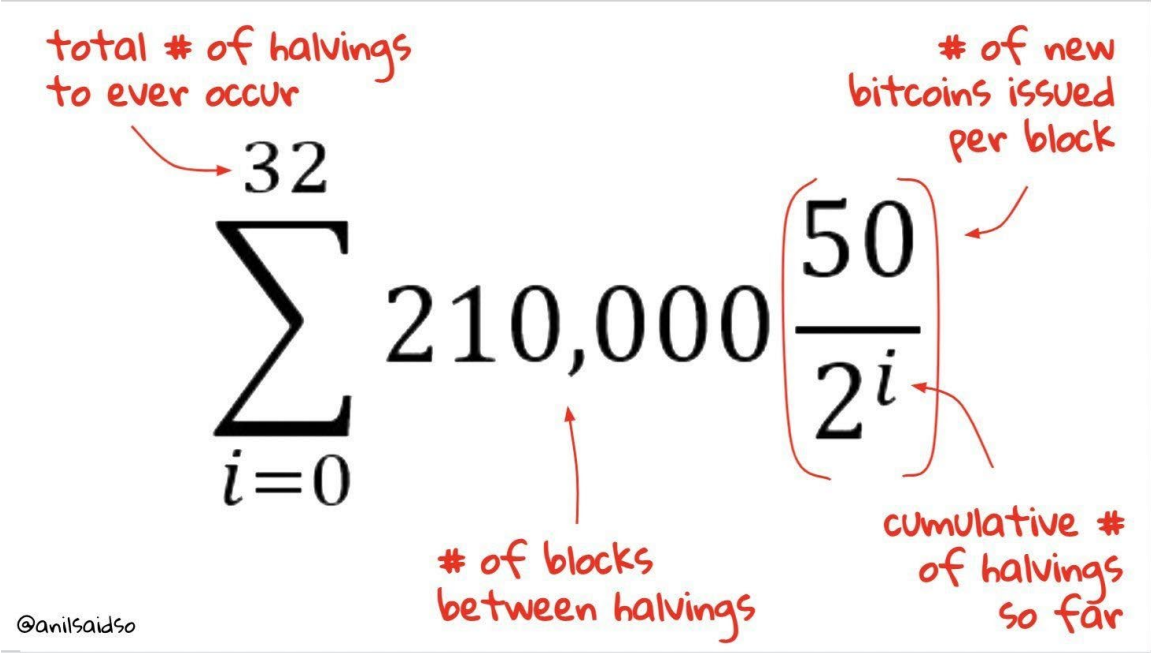
The following is a visual of how Bitcoin compares with Gold and Fiat currencies when acting as money. For a detail breakdown of the points listed in this image please refer to Appendix 1

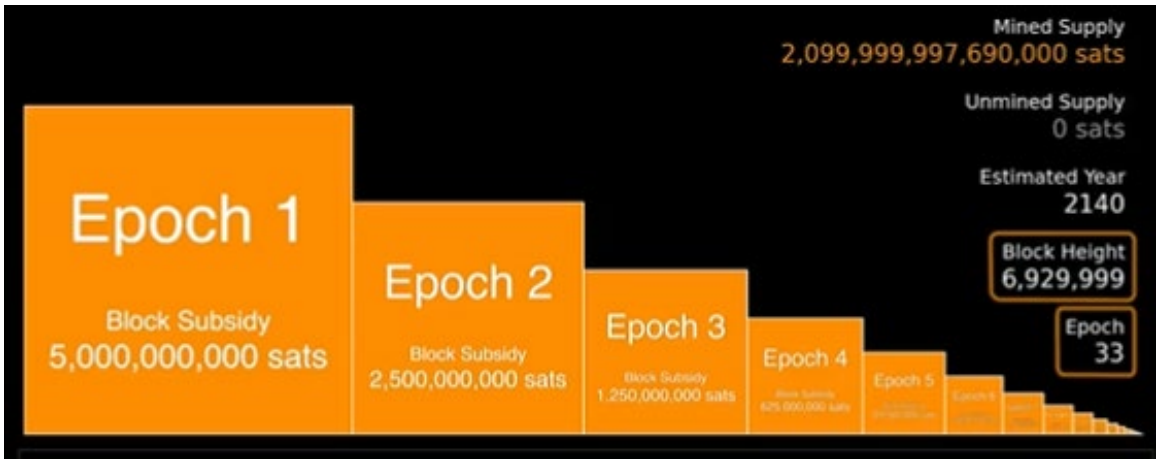


How do you create Bitcoin - What is Bitcoin Mining?

Bitcoins are created through a process called "mining," which involves using specialized computer hardware to solve complex mathematical problems, (this process is known as proof of work). When a miner successfully adds a new block to the blockchain, they are rewarded with a certain number of Bitcoins. The total number of Bitcoins that will ever be created is capped at just under 21 million. The idea behind the cap was to create a finite and scarce resource, similar to gold, which would help to ensure that the value of Bitcoin would not be diluted over time.

The following two images, provides a visual of the issuance method for Bitcoin, unlike any fiat currency we can pick any time in the future and we will know the issuance for any period of time.





As of 2023, approximately 19.25 million Bitcoins have been mined, leaving about 1.75 million that have yet to be created. The rate at which new Bitcoins are created is

designed to decrease over time, and it is estimated that the last Bitcoin will be mined around the year 2140.

As more Bitcoins are mined, the difficulty of the mathematical problems that need to be solved in order to create new Bitcoins increases. This helps to ensure that the rate of Bitcoin creation remains consistent over time, despite the increasing power of computers.

Base Layer vs Secondary layers – The Scalability of Bitcoin, the path to mass adoption

The base layer of Bitcoin refers to the underlying infrastructure that supports the cryptocurrency and enables it to function. This includes the decentralized network of computers (also known as nodes) that run the Bitcoin software, the protocol that governs the rules of the network, and the blockchain.

At the heart of the base layer of Bitcoin is the blockchain, which is a distributed database that is maintained by the nodes in the network. The blockchain consists of a series of blocks, each of which contains a group of transactions that have been validated by the network. These transactions are grouped together in a block and added to the end of the blockchain in a linear, chronological order.

The nodes in the Bitcoin network use a consensus protocol to validate transactions and add them to the blockchain. This protocol, called proof-of-work, requires the nodes to solve a complex mathematical puzzle in order to validate a block of transactions. The first node to solve the puzzle gets to add the block to the blockchain and receives a reward in the form of new Bitcoins.

The base layer of Bitcoin also includes the protocol that governs the rules of the network. This protocol defines how the nodes interact with each other, how transactions are validated, and how new blocks are added to the blockchain. It also includes the rules for creating new Bitcoins and for controlling the supply of the currency.

Overall, the base layer of Bitcoin is a complex and sophisticated system that enables the cryptocurrency to function in a decentralized, secure, and transparent manner. It is the foundation upon which the rest of the Bitcoin ecosystem is built.

Its interesting to note that the foundation has been largely unaltered since its launch in 2009, this is very important as it shows that Bitcoin was complete/operational from its inception. Having a secure and trustworthy foundation of code develops trust and assurance for business looking to build on the network, something we will explore as we look at other layers of the Bitcoin protocol.

Perceived Limitations to the Bitcoin Protocol

There are several limitations of the base layer of Bitcoin:

1. **Scalability**: One of the main limitations of the base layer of Bitcoin is its scalability. The network can currently process only a limited number of transactions per second, which can lead to delays and increased fees during times of high demand.

Too many people look at Bitcoin and say, “the base layer can’t scale so that everyone in the world can make all of their transactions with it”, but that’s not the point of what it’s for. The base layer is a censorship-resistant payments and settlement network with an auditable supply cap that has the capacity to handle hundreds of thousands of transactions per day, and layers built on top of it can be used for more frequent transactions if desired.

Kind of like how we don’t use Fedwire transfers to buy coffee, Bitcoin base layer transactions are not well-suited to buying coffee. Visa transactions that run on top of Fedwire, or lightning transactions that run on top of Bitcoin, can be used to efficiently buy coffee. Or even custodial payment methods like Cash App and Strike that run on top of the Bitcoin/lightning network can be used if censorship-resistance is not needed. The base layer of the Bitcoin network is not competing with things like Visa; it is competing with central bank settlements; the root of the global financial system. It’s an entirely separate root layer, built on computer networking technologies and internet protocols rather than channels between central banks and commercial banks.

2. **Limited programming capabilities**: The base layer of Bitcoin has limited programming capabilities, which can make it difficult to implement more complex features or applications on top of the platform.

The limited scalability of Bitcoin’s base layer has not been an issue so far, because there is only so much demand for tank-like censorship-resistant payments. And as development has continued since Bitcoin’s launch, the network has branched into layers just like any other financial system.

The Lightning network, for example, is a series of smart contracts that run on top of the Bitcoin network base layer and allow for custodial or non-custodial rapid payments online or in person with a mobile phone, to the point where they can easily be used to buy coffee, and with practically no limitation on transactions per second. Lightning is the first open protocol that we've seen, open permissionless, ethical protocol that has the transaction speed to traffic digital commodities.

In that sense, Bitcoins began as digital commodities that had utility value as an internet-native and censorship-resistant medium of exchange for people that need that capability. Bitcoins eventually acquired a monetary premium as an emergent and volatile store of value (an increasingly salable good), and began to be held more-so for their scarcity than for their medium-of-exchange capabilities. And then over time, the network developed additional ways to enhance the network’s medium-of-exchange capabilities beyond their initial limitations.

It’s also worth understanding Gresham’s law, which proposes that “bad money drives out good”. Given the choice between two currencies, most people spend the weaker one and hoard the stronger one. **Bitcoin’s low current usage as a medium of exchange is not a bug; it’s a feature of a system** with low supply issuance and a hard cap at 21 million units, especially in places where it is not legal tender and so every transaction is a taxable event. When a tank-like medium of exchange is needed, or for certain other niche use-cases, Bitcoin is useful for its payment utility. Otherwise, it’s most often held

for its monetary premium as a scarcer asset than dollars and other fiat currencies, and represents the stored-up ability to perform tank-like payments in the future.

Everybody on Earth wants to trade cross borders in dollars. If you talk to the people in the digital currency industry, they will say that the demand for the dollar is 100 x higher than the digital euro and the demand for the next this one is 0.1%. It's like 98% to 1% to 0.1% to nothing.

The most successful manifestation of digital currency is tether, and the idea that people in Lebanon want some dollars, and people in Argentina want some dollars, and people in Nigeria want some dollars. So, this other big idea is digital currency, moving on 8 billion android and iPhones, between 100 million websites at the speed of light. And that's a mega idea. In the near term, it's a $10 trillion idea.

And the reason that people use Tron or Ethereum or any of these other networks is it was easier to move digital dollars around. In the past Bitcoin didn't support digital dollars on the lightning network. So, a lot of the energy came from digital currency that we didn't support in our ecosystem. If you put those digital dollars on lightning and you secure lightning with the Bitcoin network, that $1 trillion demand will be met on the Bitcoin network, and then it will become a $10 trillion demand.

As Bitcoin is becoming a $10 trillion network, that digital currency network (lighting) will become a multi trillion-dollar network as well. As both of these networks, will eventually spread to all 8 billion people, what will happen is they will squeeze out the local fiat currencies.

A lot of the crypto ecosystem has been fueled by demand for digital currency. The other thing that people want is they want digital tokens. It's like the musicians, the actors, the artists, they want to monetize their brand. So, that audience of 100,000 major creators and millions and millions of mid-level creators, they would love to tokenize their brand. And they actually went to the crypto ecosystem to do it because you couldn't do it on the Bitcoin base layer and there was no lightning protocol to do it.

Thus, they brought their notoriety and their marketing cachet to the other cryptos where then they were monetizing some unregistered security token. The moral hazard is to try to do a good thing in the wrong way.

Giving dollars to Lebanese is a good thing, on an altcoin (an alternative digital currency to Bitcoin) is a bad thing. Giving a token to a celebrity or an artist is a good thing, but doing it on an unregistered security is a bad thing.

So, if you look at all these ideas digital tokens, digital securities, they're all good ideas, executed in a technically unsound fashion, in an ethically unsound fashion and in economically unsound fashion. So, the next step for us is clear out all of the unsound practices in the crypto industry and bring the good ideas to Bitcoin on top of the lightning network.

A question that is often asked is why is lightning technically sound? Because it is channel based. It's like a shared nothing, infinitely scalable architecture where only the value in the channel is at risk. It's just an obviously better way to give functionality to 8 billion people in a technically sound method. According to engineers who have observed

the crypto industry, every other crypto chain is technically defective, unstable, unscalable.

Not only is using Bitcoin on lighting a technically sound idea, lightning's gas is Satoshi's. Gas is the fee required to successfully conduct a transaction or execute a contract on the Ethereum blockchain platform. A Satoshi is the smallest unit of Bitcoin. It is equivalent to 0.00000001 bitcoin. The use of Satoshi as a fee in the Bitcoin blockchain is an important part of how transactions are processed and confirmed on the network.

1 Satoshi = 0.00000001 ฿
10 Satoshi = 0.00000010 ฿
100 Satoshi = 0.00000100 ฿
1,000 Satoshi = 0.00001000 ฿
10,000 Satoshi = 0.00010000 ฿
100,000 Satoshi = 0.00100000 ฿
1,000,000 Satoshi = 0.01000000 ฿
10,000,000 Satoshi = 0.10000000 ฿
100,000,000 Satoshi = 1.00000000 ฿

When a user wants to send a transaction on the Bitcoin network, they typically include a fee in Satoshi's as a way of incentivizing the network's nodes to prioritize their transaction and include it in the next block. The fee is paid to the miner who confirms the transaction and adds it to the blockchain. The higher the fee, the more likely the transaction will be confirmed quickly. This helps ensure that the network remains fast and efficient, even as the number of transactions on the network grows.

So, you're using a commodity, actually a scarcity, but an ethical commodity as the gas fee, not an unregistered security. Therefore, you're not manipulating the token to run the network. And it's economically sound because it's based upon Bitcoin. Bitcoin is the only digital scarcity, and Bitcoin has got the integrity and security to last 100 years.

Regulatory Perception - The Howey Test – What is a Commodity/Security

Commodities have been used as money for many centuries, commodities are widely accepted and have intrinsic value, which means that they have value in and of themselves, regardless of their use as money.

A digital commodity, is the ability to move something of value, point to point between 20 billion computers at the speed of light and program it with final settlement.

It has not nearly been fully realized. At the point when 8 billion people are swapping value back and forth, and at the point where millions, if not tens of millions of websites are swapping value back and forth at high frequency, 100 times a second, 1 million times an hour.

When that happens, we'll have realized the potential of a digital commodity, because that that is the true internet of money. Money over IP. Moreover, Bitcoin is the first asset that could serve as a digital commodity.

Securities, on the other hand, are financial instruments that represent ownership of an asset, such as a bond or a share of stock. Securities are typically traded on financial

markets, such as stock exchanges. While securities can be traded as a medium of exchange, they are not as widely accepted as commodities and do not have intrinsic value. Instead, the value of a security is derived from the value of the underlying asset.

One of the main issues with securities is that the issuer has the ability to influence the value of the security. This can be done through various means, such as issuing new securities, buying back existing securities, or paying dividends to shareholders. For example, if a company decides to issue new securities, it will likely dilute the value of existing securities by increasing the total number of securities outstanding. This can have a negative impact on the value of the securities, as the company's assets and earnings will be spread across a larger number of securities, potentially reducing the value of each individual security. Overall, the actions of an issuer can significantly impact the value of securities and should be carefully considered by investors when making investment decisions.

This brings us to the Howey Test;

The Howey test is a legal test used to determine whether a particular transaction qualifies as an "investment contract" under US securities law. It is named after the Supreme Court case SEC v. W.J. Howey Co., which established the test.

The Howey test has four prongs, and for a transaction to qualify as an investment contract, all four prongs must be met:

1. The transaction must involve an investment of money.
2. The investment must be in a common enterprise.
3. The investor must expect to profit from the efforts of others.
4. The profit must come from the efforts of the promoter or a third party.

If a transaction meets all four of these criteria, it is considered an investment contract and is subject to regulation under the Securities Act of 1933. This test is commonly used to determine whether a particular asset, such as a cryptocurrency, is a security and subject to securities regulation.

Something special about Bitcoin is what they call the immaculate conception, the idea that the network was launched without any intent to make money there was not an ICO (initial coin offering) there was never an IPO (initial public offering) there was not a venture capitalist involved, there's no group of developers that own 20% of the Bitcoin network and, there's no foundation that controlled the treasury. Satoshi is the founder but a synonymous founder that disappeared within a few years after launching the network and the coins that were mined by Satoshi or allegedly mined by Satoshi never moved and so the implication is this is not a security this is property.

Where are we now

We now see all the regulators in the Western world have embraced Bitcoin as an asset class.

There were questions about whether or not Bitcoin was going to be embraced by regulators, whether this would be banned. There are a lot of legitimate leaders in the United States that said, this is going be banned. They would either say it's going to be

banned because it's a Ponzi, they were the deniers, or they said, this is going to be banned because it's just too good to be true, so it'll be banned.

So, there were the people that didn't understand it, and there were the people that understood it but thought it was too good, and so the government would take it away. And then when the China crackdown took place in 2021, everybody said, well see, China banned it. And so that proves that it's probably going to get taken away.

And here we are in 2023, and what you have is a fight between the Chair of the SEC (Securities Exchange Commission) and the Chair of the CFTC (Commodity Futures Trading Commission) to see who gets to regulate it or who gets to endorse it.

What has become very clear is you've had the head of the CFTC say, this is a commodity. You've had the Chair of the SEC say, this is a commodity. You have had the Secretary of the Treasury, Janet Yellen, recite the legend of Satoshi in a speech at American University.

We've had the Chair of the SEC educate the entire working group, the entire cabinet, and most of Congress, as the definition of a commodity, "an asset without an issuer", over and over and over again.

So, the last 36 months have brought mainstream adoption and legitimacy to Bitcoin, something that wasn't there in the past years. Today, what you have is you have a raft of regulators that have said a commodity is an asset without an issuer.

There is only one digital commodity. There is only one crypto asset network that is lacking an issuer. And that leaves 20,000 other crypto "things". thus, we arrived at the start of 2023, and the question that we wondered, will this be banned? Has been answered. No, this is not being banned. This is being embraced.

Will it be hacked? No, it has not been hacked. It's the most powerful computer network in the world. It's the most powerful crypto network in the world.

So, when people ask, what backs, Bitcoin? The answer is a crypto hashing network that would require three and a half Earth's worth of energy to 50% attack with conventional cloud computing from the best GPU companies in the world.

So, we've reached a point where Bitcoin is embraced by the regulators and that its backed by the most powerful systems in the world.

Can it be copied? 100%, in fact, it's been copied 20,000 times, if you want to copy it, you have a simple roadmap.

You just need to have an ethical launch by a founding team that takes no monetary interest in the asset. You need to give it to hundreds of millions of people, you need to back it with 380 X hash and three and a half Earths worth of hash energy, and you need to maintain the integrity of the data and refrain from making any unnecessary or potentially damaging changes or modifications, especially those motivated by personal ambition or influenced by recent external information.

What is next to come

The Bitcoin community is extracting itself from the dysfunctional relationship with the rest of the crypto industry.

The meltdown of the crypto ecosystem is educating an entire generation of mainstream journalists, mainstream investors, mainstream regulators, and policy makers. It's going to provide a framework by which people start to understand the difference between an ethical, economically sound, technically sound asset and a fair, equitable, principled approach versus an uneconomically sound, unequivocally, sound, unregistered security.

There is a clear difference between a centralized staked token and a decentralized proof of work token. Due to recent events, we now have a few examples. The meltdown of terra and the meltdown of luna, and the meltdown of the wildcat exchanges, the meltdown of FTT, the meltdown of FTX, all of those has put the fragility and the defect in architecture of the crypto industry front and center.

A big part of what's going on right now is the other side of this, which is investors in the mainstream are going to understand, based upon results, why a digital commodity is a better idea than a digital security.

And that's happening in front of our face. Regulators are going to have to move, they're going to move much faster, and as they move much faster, they're going to lay down expectations of the registration process for what it takes to become a digital security, a digital currency, and/or a digital exchange.

As this happens, what you're going to see is that 98% of the stuff in the crypto ecosystem is going to shake out. This entire wild west environment will start to dissipate. It'll be like the meteorite that hit the earth 80 million years ago. And a lot of stuff will get wiped out. A few things will rise, rise out of the crypto ecosystem that will be cleaned up.

And then a lot more mainstream actors will enter this space. Mainstream investors, mainstream banks, mainstream financial providers, registered companies, and the entire industry will take on a new character.

The 3 Drivers to a Bitcoin Standard Adoption

If you look at Bitcoin right now, it's going to be driven by institutional adoption as an asset, and it's also going to be driven by technology utility, and it's also going to be driven by macroeconomic winds.

So, when you look at the next four to eight years of Bitcoin, the institutional adoption is driven by the utterances of the chair of the CFTC, the SEC, by FASB accounting, the fair value accounting adoption, by the adoption by the FDIC decisions. These points provide a framework toward institutional adoption and driving Bitcoin as a store of value.

The other thing is the explosion of lightning. In 1991, you had TCP IP and we had the Internet, but not many people used it. In 1994, you had the Netscape browser, and that was the killer app for the Internet. And pretty soon, you had 100 million people download that browser and it caught fire. Well, we are like 1991 in money over the Internet, money

over IP.

Michael Saylor and other experts believe, there's going to be a couple of killer apps on the consumer side. A killer app that's like a lightning wallet that moves digital dollars and BTC and swaps in and out of local currency. When you can move the peso, the dollar and the BTC in the hands of billions of people, you're going to see hundreds of millions and then billions of people downloading these applications.

The third driver, this is where the politicians are going to help us out, they're going to keep printing money, they're going to print money in every single country. And in result all their currencies are going to continue to weaken.

The combination of those three drivers is going to play out against the new reality, which is Bitcoin is the only digital commodity, It is the only crypto asset, there is no second-best crypto asset.

Satoshi gave us something, a place where we could win and, a strategy where the individual/company could win. And the strategy is: Withdraw your economic energy from the currency, which is the rigged system, and move it into a currency which is to your benefit.

Not only do you move your energy into a system that isn't continually bleeding you, but it also turns out that not only is Bitcoin not an inflationary currency, Bitcoin is a deflationary currency which is viral and getting stronger.

When you work as hard as you can, and you sacrifice everything you have, in order to support a weak currency that's collapsing, you're just servicing the regime. And when you put it into a semi weak currency, its slowly weakening, you still just surrender your hope and your future. But when you put it into a deflationary currency, a currency that gets stronger as more people join, not only do you stop feeding the corrupt system, but you begin to strengthen the virtuous system.

And Bitcoin gets stronger as more people join. Bitcoin gets stronger as you put more money into it. But Bitcoin also gets stronger as you put more creativity or innovation. Every single developer that builds a lightning app or builds a new improvement to Bitcoin makes the network stronger. Every communicator, and every creator, every single person that puts their vocational skill into this network makes it stronger. When you put your balance sheet in the network, you make it stronger. When you put your passion into the network, you make it stronger. When you bring your organization network, you make it stronger.

Part 4 - Bitcoin As Property: Bitcoin vs Real Estate

This section compares Bitcoin to real estate and explores which is a better investment in today's age by observing the risks associated with each.

In the absence of sound money, if fiat currency or the currency of any given society is not holding as purchasing power, then rational actors, be they corporations, or individual investors, or families will tend to take their weak currency or their weakening currency, and they will want to invest it in some stronger asset that will be a store of value. Historically this has been Real Estate, Bonds, Equities and Gold.

There was a time when you could actually take your cash, put it in a bank account, and generate 5% interest. And if you thought you were getting 5% interest and the natural inflation rate was less than you would do that. Most people concluded that that wasn't good enough and they actually became stock market investors or real estate investors.

But there was a debate about what the inflation rate is. And so, if you roll the clock back 30 years, some people less sophisticated would have put their money in a savings account. Others, mid sophisticated would have put their money in a mutual fund.

The highly sophisticated put their money in commercial real estate or real estate ventures. And the reason they put them in real estate ventures, is because real estate offered greater property rights and greater leverage. You could lever real estate upwards of 10 to 1 and more readily financed it without a mark to market.

That regime kind of disappeared maybe 20 years ago, or certainly 10 years ago when the yield on savings accounts went to 0. So, when the yield on savings account is 0, then there's no one thinking they're saving money at 0% interest. The perception was still the inflation rate was 2%, even though it was much higher than that.

So, now Long-term store of value moved to a focus upon stock indexes and real estate and other ETFs. The king of all ETFs was the Spyder, the S and P index. But we had an explosion in ETFs in the past decade, and there were all sorts of other types of exchange traded funds that represent ownership of a share of commodities or companies or something. And so, all of those things are the ETFs or securities.

Now, commercial real estate investment is extremely capital intensive. So, you have to be in a 0 or 1% of the investors to have the capital to do that. Most of the rest of the investors, if they wanted to pursue a real estate strategy, they would get a second investment property. The classic would be: I bought an apartment to Airbnb, or I bought a rental apartment or rental property. And this takes us up to the stage where people started to notice Bitcoin.

By the end of 2021, after the pandemic crisis, we had monetized a lot of different assets. We had a spike in housing prices where we're monetizing. We're basically putting a premium on housing in excess of its utility value. We had a spike in commercial real estate, we had a spike in meme stocks and their value. We saw extraordinary spikes in collectibles, watches, sports cars and artwork. So as the central bankers were flooding the economy with excess currency, the currency is trying to find a tangible asset that will hold its value as the currency debases. And everybody chooses a different one depending upon what they know and what they're comfortable with.

Bitcoin is one of those assets which is now being monetized. And it is rising through this chaos to be the apex property asset or the apex monetizing asset. The 5 biggest category of assets that are at risk

of being demonetized by Bitcoin are: Currency, bonds, real estate, equity, and gold. Gold is 10 trillion of market valuation. The other 4 are 10X more than that. So, the big 4 are the currencies, bonds, equities, and the real estate.

Experts like Michael Saylor believe that we're going to see a consistent demonetization of other key assets. And one asset that we're seeing demonetized right now is bonds. Bonds are crashing, they've lost 20-30-40% of their asset value as interest rates come up.

Demonetization

This section of the paper is going to focus upon real estate, because the interesting discussion here is how Bitcoin demonetizes real estate and what will it demonetize.

What does it mean to demonetize? Well, there's a value of real estate to a utility value to someone that's using it. True utility rental value. And that doesn't matter whether it's a consumer or a business, there's a utility value to the real estate. And then to the extent that the price of the real estate is beyond that, that is the monetary premium.

The way that you would know that it has a monetary premium is. You think about all the people that have excess cash and they don't want to store it in cash. They don't have a safe bank account or a savings account to put it in. And their view is, I've got to buy an investment property.

The world is full of people that have said, I bought a second investment property or I bought a piece of commercial real estate, or I'm an investor in commercial real estate because that is the place that I wish to store my money.

Why do you even want to store your money? Why do you even want to be an investor, The only reason anybody wants to invest in anything is because they believe that the risk-free rate of return on their money is too low to keep up with inflation.

If I told you that the money was going to grow in value 10% a year and you knew the inflation rate to be zero, you wouldn't invest in anything. You would just put your money in a safe place and wait for it to create and value 10% a year.

So, in extreme hard money environment, the average person, the nonexpert, isn't an investor. The only people that really should be investors in theory are professional investors. Professional venture capitalists and professional investors who spend all of their time analyzing opportunities to ascertain the true long-term value of the cash flows.

But the world is full of people that are actually making investments in order to preserve their wealth and they're doing it because of the weak money. And so, one of the places they make their investments is in real estate investment properties.

So. How does Bitcoin demonetize that? To explore this let’s start from first principles and ask, what is property? Answer: Anything over which a business or a person has lawful rights to**.**

Now we can either get to pure property by taking away all the defects of real property, or we can start from nothing. Let’s start with real estate. Real property. And strip every defect fact away from it.

The Defects of Property

So, let's say you had a piece of commercial real estate. Maybe it's a $2.5 million building called a warehouse. A $2.5 million building that's about 100-Bitcoin building as of right now. Let’s assume we

have a genie with infinite wishes, lets highlight the defects of property and see how we can make it perfect property.

#1 - Assets in the real world have a finite life span - So what's the first defect? Well, the warehouse has got a finite life. It's only going to last 100 years. And after 100 years, the warehouse is going to fall down or rust. It's got a problem there. It won't last 1000 years, It won't last 100,000 years. So, I say to the genie, why don't you make the building last forever? Like literally immortal. Okay, how do you do that? Well, just make it out of something which is literally indestructible. How about like pure energy? Pure solar energy? Stars last a billion years, so make it out of star stuff. Okay, fine, the building is immortal.

#2 - Buildings are prone to damages, The second problem is buildings are prone to damages if there's a hurricane, or if there's an earthquake, or if someone drives a truck into it, or if someone sets a bomb off in it, or if. It gets rained on, and the water runs into cracks in the buildings, and the water expands, and the building facade decays, and it crumbles. So, I say the genie make it indestructible. No problem. When I made it immortal, I also made it indestructible. So, it doesn't matter how often it gets rained on, and if it gets struck by lightning or rained on or crashed into it or exploded, it's not going anywhere. Indestructible, immortal building.

Remember, the building was worth $2.5 million 100 Bitcoin. Well, is the building that's indestructible and immortal worth more or less now? A little bit more, right? Maybe a lot more, you could say. Well, I got to discount it for the cash flows that you're going to generate in years. Generally, a building that will last forever that you can't destroy is more valuable.

#3 - Maintenance Costs - Now, the issue is the building has maintenance fees. There are all sorts of fees. Normally on an ordinary building and you're paying insurance, that's a maintenance fee. Well, the insurance goes away if the building is indestructible. Ok, and then I have to always if I have a building with steel or something in it, I have to paint it to keep it from rusting. Well, that goes away. No repainting, no changing out the roof, no caulking, no fixing cracks. So, the maintenance fees go away. And if the maintenance cost of the building goes away, then it's worth even more. Oftentimes, maintenance fees could be up to 3% of the commercial value of the building.

So, if you pay 3% of the value of the building for the next 100 years, that's 300%. If I took the 300% and I took it to zero, that building is worth more. So, the genie basically makes the maintenance cost, become a low maintenance or zero maintenance building.

#4 - Property Taxes - What else drives down the value of the building? Property taxes. The building is sitting in the middle of a city, and there's a city tax. There might be a state property tax there in addition, but there is always some kind of property tax. Those taxes can range from 10-20 basis points (A basis point is one hundredth of 1 percentage point**)** a year to 250 basis points a year. In Florida, the property tax on a building that's held as a residence is 200 basis points a year.

The $2.5 million building cost you $62,500 a year to hold it. That's another form of maintenance. So, I say to the genie, well, make the property tax go away. Well, how do we do that? Well, we move it out of space. It's not in a city, it's not in a country. It's in cyberspace. So, in cyberspace, there's no property tax. If I could move the building into orbit around Jupiter, there'd be no property tax. Right. Move the building.

So now I've got an indestructible, immortal, maintenance free building with no property tax. It's getting a bit more valuable.

#5 - Inability to move property – Next issue is location. The building is sitting in California, and nobody wants to rent the building in California, but all the customers are in New York City. So, I ask the genie to make the building teleportable, so I can instantly teleport the building anywhere. So, I blink, and the building is teleported in New York City. Great. Well, now they want the building in Tokyo during the Tokyo Olympics. So, I blink, and the building is there.

#6 - Restricted Frequency of Rent - A limitation on who you can rent it to. So, when I can teleport the building, then I can move it to any city or any place where there are people and I can rent it to them. But the other problem is, you can only rent a building maybe by the month, maybe by the year, maybe by the decade. Well, what if I've got someone that's willing to pay me? $100,000 a day, but they only want to rent it for three days during the Monaco Grand Prix, or during the inauguration in DC, when there's infinite demand and people will pay ten times as much. So, I say to the genie, let me rent it to anyone for any period. Or another way to say it is I want to be able to rent it at any frequency, anywhere, at any increment that upgrades the value of the real estate.

Now, someone comes along and looks at my warehouse and they go, yeah, this is great. I would pay you quadruple normal rent, but I only want a quarter of it, okay? I'd like to be able to subdivide it.

#7 - Inability to Subdivide –The ability to freely subdivide and recombine the property at any frequency. What if I could subdivide the building into four pieces and ship it to four different cities and sell it to the highest bidder? The ability to freely subdivide and recombine the property at any frequency makes the property more valuable.

Here's a trick, convert the building into a hotel, divide it into 100 rooms. That would make it into 30 suites. And then rent the suites for 30 hours each, and then recombine it into one big banquet hall, and then convert it back into a warehouse. And what you're doing is you're morphing the building day by day, place by place, to maximize the rents.

Now, you look at it like that, you say, that building I started with doesn't feel that good. It was static, it couldn't move, it couldn't reconfigure. This version of the building sounds much better, it is a flexible building. So, then my issue is, it's only a warehouse or it's only a whatever. I want the asset to be used for anything.

#8 - Inability to simply convert the property into something else. So, if the genie basically cast a spell and allowed me to convert the building into a school or into a sports stadium or into a hotel, or into a container ship. Well, it'd be a lot more valuable if my real estate could become a different form of property. So, if you can use it for anything, that's a big upgrade.

#9 - Development Rights. The other thing you want with any property, is you want to upgrade it over time. Let’s say, I've got a piece of property, I've got 10 acres, and it's a parking lot. Well, it's worth x.

But what if I could develop a thousand story parking lot parking garage on top of the same acreage, and I could develop 1000 story building on it? Well, my development rights are worth a lot. In fact, in New York City, oftentimes you see these people that operated parking lots and they sold their air rights, the rights to build above the parking lot to the hotel or the commercial office building to their left or their right. And the air rights might be worth $10 million or $20 million. The parking lot is never going to generate $20 million, but the right to develop is.

So, my property would be a lot more valuable if I had the right to develop it. Now, who controls that right? Well, it's your neighborhood, your precinct, your city, your state controls your right. But if I had

property in cyberspace, I would have no limitations on my ability to develop it.

#10 - Cost of Improvements - The next defect is, real estate in the physical world is upgraded with tractors and machines and steel and electricity and material. But what if I could upgrade the property using computer chips? If I look at the efficiency of a computer chip, they've improved by a factor of a million over the past 10 to 20 years. But if I look at the efficiency of construction cranes in New York City, they have not improved by a factor of a million in the past 20 years. So, clearly, moving into the computational domain for development out of the physical domain is a way to upgrade the value of the property. And that's another really nice thing about digital property versus physical property.

#11 - Privacy - Now, all of those are upgrades, but then the genie says to me, I got an idea for you. I'm going to make your property invisible to those who would do you harm.

What is the definition of privacy? One definition of privacy is my property is invisible to those who would do me harm and available to my friends and family. So, think about walking down the street, seeing a wall, and you see the signed private property. It's not private to the family of the owner, it's not private to the friends of the owner. It's private to the criminals with guns outside the fence that might want to jump the fence and do you harm. The ultimate private property, though, is property that's so private that no one that can do you harm, whether they're a criminal or they're a competitor.

They could be a competitor, they could be a criminal, they could be a corporation that wants your property. It could be a government or state actor when you don't have property. If you did have a 100-story indestructible shining building in the middle of a city, don't you think that people in the city would start staring at the building and resenting the person that owns that?

Ideally, I don't want to own a perfect piece of property in the middle of a city where there are malefactors that would do it harm. I want the property to be in the middle of the Milky Way Galaxy somewhere a billion light years from here, where no one can see it, no one can get to it, and no one will resent the fact that I have it.

That is what privacy is. So, the genie gives me privacy to my property and they upgrade the value of the property. What would you rather have? The skyscraper in the middle of the capital of a hostile nation state or the equivalent skyscraper somewhere in the ether that's just as useful to you.

#12 - Transaction Fees - Now, we haven't gotten rid of all the deficiencies in property. For example, if you want to buy a piece of real estate, or sell a piece of real estate, if it's a residential, it costs you 6% coming and going. A $2.5 million residential real estate is $150,000 of fees to buy it, and $150,000 of fees to sell it. Heck, you turn it over once and you paid 12% of the value of the thing. With commercial real estate, the fees are a bit lower, but they're still percentage points. Upwards of 1-2%. So, I think I'd ask the genie to allow me to buy and sell the property at no fee or five basis points, make it possible to transfer it at zero.

You can transfer Bitcoin on chain or on the Lightning chain at numbers that are anywhere from ten basis points to one basis point, and on lightning, less than one basis point.

#13 - The property can be taken away from you – You want your property not to be private, you want it to be unconfiscateable. If you own a farm outside of a city, and the city wants an airport, they can seize your farm by eminent domain. They can buy it at the rate they want to pay. And if you don't want to sell it for that amount, they can just pass the law taking it and they can pay you whatever they want.

And in a war, they're going to take it for nothing. They'll just declare it's a war and they'll say you have to give it to the public for the public good and in peacetime, they'll take it for whatever they want.

And maybe they'll take it for their road, and potentially they'll take it for their airport. Other times they'll take it for their public park, or perhaps they'll just take it because they don't like you. Maybe you're the wrong religion or the wrong color or the wrong shape or the wrong look or you've said the wrong thing.

So, everything that we've said before to the genie, it still doesn't solve this problem. Right. How do you make it unconfiscateable? Well, so if you actually put title to the property in your head as opposed to anywhere else, then it does become unconfiscateable, it can't be seized.

#14 - Developmental Jurisdictions. As I pointed out before, the idea of teleporting it is not just teleporting it in space, but also moving it through jurisdictions. Different jurisdictions put different restrictions on it. So, I want the property not to be able to be impaired by developmental restrictions. Anything physical by definition can be impaired, but anything in the cyberspace, you have a decent opportunity to keep it from being impaired simply by moving it.

#15 - Ability to borrow against your property at any frequency. - We talked about renting it at any frequency, but the other right you have with property is to mortgage it to actually borrow money against it. When I have a bill in a state in Atlanta, I can mortgage it to banks that do business in Atlanta that are licensed by the nation state, by the state of Georgia, by the city of Atlanta that have a license to do business in the United States. But. If someone offers me a better mortgage, if they offer me a mortgage at half the cost, but that is coming from a different nation state, I can't take that mortgage because I can't move the building.

So, when the property becomes flexible, it becomes possible to mortgage it to anyone on earth or in the heavens. Any bank could become the counterpart in the mortgage. But mortgages come in flavors like generally multiyear, one decade, 30 years. What if I wanted to mortgage it at any frequency? What if I just wanted to borrow some money for the next 30 seconds? So, the ability to mortgage to anyone at any frequency is an upgrade.

Why would I want to do that? Well, here's a real world or a practical example. I want to actually borrow money against my property, and every month someone offers me a higher bid or a lower cost, a better offer. So, I just move it. One month, I've mortgaged it to a bank in Singapore. Another month, I've mortgaged it to a bank in London. The third month, I mortgage it to a bank in Atlanta. The fourth month, I've mortgaged it to a different type of company.

It's a very flexible piece of property and I can move it at any frequency. And I'm, in essence, driving down the cost of my capital in the same way that when I rent it at any frequency, I'm driving up the yield on my asset, That makes it a better business.

#16 - Finite Density – What if we can store an entire billion dollar building in the palm of our hand? What if we could store a 10,000-floor building and we could wear it around our fingers? This is the concept of economic density. In this particular case, if we can get to infinite economic density, that would be very convenient. Because if we don't have infinite economic density, when it takes you an entire city block to have a warehouse, well, then you run out of the ability to manage that warehouse. This infinite density gives me a lot of flexibility to manage the property however anyone wants.

#17 - Placing a cap on the number of properties issued– So we say to the genie, now we want a guarantee that you don't sell more than 21 million blocks of this, or do this for more than 21 million in the universe forever. So, if you actually could get the universe to agree that there'll never be more than

21 million blocks of perfect property, that's the icing on the cake. When we did everything else, we created digital property. But when we capped it at 21 million blocks, we made it digital scarcity, or the ultimate scarce property.

What happens to property values when the city passes a law saying that no one can develop any more real estate, no one can build any more buildings, or no one can build a building more than ten floors forever in city limits. When you put a restriction on the property development, it drives up the value of all the property within the city dramatically. So here we're talking about putting a hard cap limit. On digital property in the universe for all time.

That's much better than 21 million for the next hundred years or until the administration changes or someone passes a law, or 21 million but, only until the United States of America ceases to be a nation state. That's not quite as good as 21 million forever.

Section summary

So, what we just did there was we made about 17 wishes to our genie, and each wish removed a defect in the property. Now back to the original question, Do I want to own a $2.5 million warehouse in any city in the world, or do I want to own 100 Bitcoin?

When you buy the $2.5 million warehouse, you are marrying the neighborhood zoning board, you're marrying the city, you're marrying the county, you're marrying the state permanently. Basically, you're married for life to the country.

And if you think all of those will go on forever or for your useful horizon perfectly, you've still got the issue of acts of God. Now you're exposed to earthquakes, tsunamis, floods, fires, lightning strikes, hailstorm storms, global warming, et cetera. And it's pretty clear, right, that commercial real estate was a good idea for property preservation in the 20th century.

But in the 21st century, it's an antiquated idea. As the governments and as the society around the property decays, the property itself decays. For example, you wouldn't really want to own the most beautiful building if it is in a country where the regime collapses. You could have a luxury hotel, but if the currency collapses and the government collapses, your luxury hotel isn't going to hold its value.

So as various nation states collapse, the properties collapse. A great case in point would be to go look at, say, luxury properties in Cuba, and look at what happened to luxury hotels and luxury houses in Cuba. With the rise of Castro, it kind of peaked in 1960. And then for the next 60 years, all those properties decayed gradually, over a long period of time. Usually within 40 or 50 years, whatever beauty or value was there is gone, because they haven't maintained them, and they can't maintain them, not without fixing the other economic ills.

Bitcoin is the opposite of that. Whereas commercial real estate peaked, at different points in different jurisdictions over the last hundred years, Bitcoin is now just beginning to come into its prime.

And every time a new lightning wallet is shipped, Bitcoin is upgraded. And every time a new layer 3 app is created, Bitcoin is upgraded. And every time a new miner comes online, Bitcoin is upgraded. And every time a new regulatory guideline is laid out, Bitcoin is upgraded. So, Bitcoin is just continuing to improve its property, while real estate is continuing to decay its property.

If we come back to the question, how does this get demonetized?

Well, you can see that the only reason that a casual investor wouldn't start to shift their allocation of savings from commercial real estate to Bitcoin, is they don't understand Bitcoin. If you walked up to the typical real estate investor and say, quick, give me the 17 crippling defects in your real estate, they couldn't name the 17 things I just laid out to you. And you know what? I couldn't either, before I knew Bitcoin.

You don't understand the defects in your property until you see perfect synthetic property or digital property, just like you don't understand the defects in your currency until you see perfect currency.

If you don't understand Bitcoin, you don't know what's wrong with gold. Also, one does not understand what's wrong with fiat currency, really, until they understand what's right about Bitcoin. I think the same is true with property holders. They don't understand what's wrong with their investment until they understand what perfection looks like. And most of them, when they hear Bitcoin, they just are afraid. Their reaction is just, oh, it's scary, I'm afraid. I don't know much about it. It's too volatile, and their brain shuts off, and that's as far as it goes.

As we educate the population on Bitcoin, the only thing not to like about Bitcoin is that it is new and volatile. And once you understand it's new and volatile, well. What is the negative?

Oftentimes, people have managed to not mark their real estate to market. If you can avoid a mark to market loan on real estate, then you're in good shape. Any big property development family that went bankrupt, they normally went bankrupt because their real estate assets got marked down and their loans got called by the bank. So, it's that volatility which is the number one risk. And as Bitcoin's volatility decreases over time, the loan to value ratio that you could incur if you're acquiring Bitcoin will start to advance. Right now, it's a low loan to value, but it will grow as the volatility deteriorates.

And as I've illustrated, even in commercial real estate, there still is some volatility and there are still some mark-to-market loan defaults sometimes. But having said all that, whether or not the asset is volatile doesn't change all the other strategies with regard to real estate investment.

If your only strategy is, I wanted to borrow money to buy real estate, well, then you're going to lean toward nonvolatile traditional assets that your bank won't remark every day. But if you're not using debt to make the investment, if in fact you were holding $2.5 million in cash right now, and your choice is, do I actually put it into Bitcoin or do I put it into something else, then it's a slightly different calculation.

Over time, education will cause people to gradually demonetize their real estate and move it into Bitcoin.

Part 5 -Risks of Equity– The human dilemma, why Bitcoin is a safer choice

This section discusses the 22 risks involved in running a business. According to Michael Saylor, the more human action required to run a business, the greater the risk. The risks can be summarized as the human dilemma. The risks include governance/reputational, operational, strategic, financial, competitive, technological, political, location/facility, regulatory, employee, vendor, customer, war, currency, tax, weather, legal, tort, patent, health, and existential risks. Each of these risks is explained in detail.

The risks of Equity

1. Governance/Reputational: Directors/management, the people are the weak link, any past of present action can be seen as a risk on the company, in the age of social media it is fairly common for actions that people thought were done behind closed doors in secrecy get exposed and alter a company's reputation.

2. Operational: Operating a business is not an easy task, it requires Talent and Courage and this is an ongoing process, requiring 24/7 oversight.

3. Strategic: Sales, acquisitions and the managing of assets, will drive the success of a company, a major risk for a company is a Dilutive Acquisition deal.

4. Financial: There are 3 general financial risks to a company: Credit, Counterparty and Banking. Credit risk - the possibility of a loss resulting from a borrower's failure to repay a loan or meet contractual obligations. Counterparty risk is the likelihood or probability that one of those involved in a transaction might default on its contractual obligation. Banking risk the potential loss to a bank due to the occurrence of particular events.

5. Competitive: The potential for a business's competitors to prevent its growth and success. This can come in a Direct form from those in your industry competing against you or in an Indirect way, with a development in technology or act of nature to name a few.

6. Technological: Also known as information technology risk, is a type of business risk defined as the potential for any technology failure to disrupt a business. Companies face many types of technology risks, such as information security incidents, cyber-attacks, password theft, service outages, and more. Its important to note that technological risk drives strategic decisions of a company. Another type of this risk is a new technology emerges that disrupts your business operations and renders sections of your business obsolete or less effective.

7. Political: The risk an investment's returns could suffer as a result of political changes or instability in a country. Forms of political risks include: State, Municipal, National and International.

8. Location/Facility: Location risks encompass any type of natural disaster that a business may encounter — such as fires, floods, hurricanes, earthquakes, tornadoes, or winter storms. It also includes liability risks including: jurisdiction, custody, or control primarily in the areas of environmental management, fire protection, safety, and health.

9. Regulatory: Regulatory risk is the risk that a change in laws and regulations will materially impact a security, business, sector, or market. It should be noted that competitors can use laws to sabotage or gain a competitive edge vs a competitor. *It should be noted that Bitcoin also faces this risk.

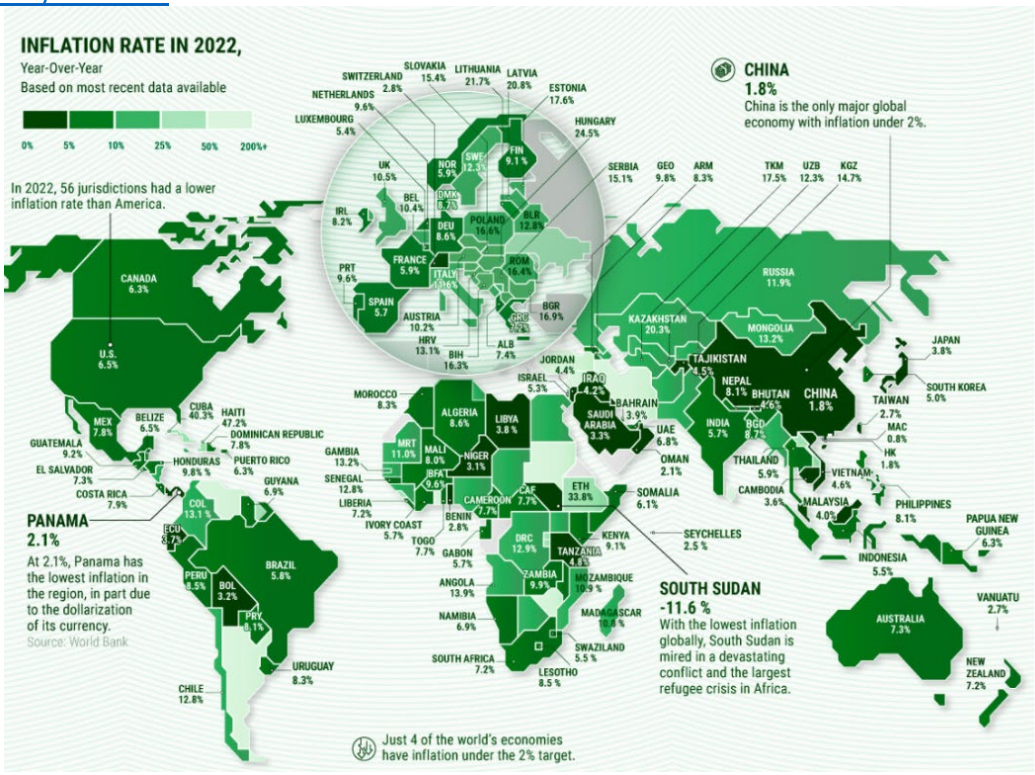
10. Employee: All the things that a company employee can do, whether intended or not, which can damage the employer's business in some way. This includes Civil, Financial and Criminal elements of risk.

11. Vendor: Covers a wide range of risks your organization and its customers face due to reliance with vendors and the products or services they provide. It should be noted that utility companies such as electric and telecom providers have the power to disrupt business activities with a click of a button. It is very important to have the relationship with vendors, landlords, creditors and equity providers. It is recommended to have competing vendors to de-risk the business operations wherever possible.

12. Customer: There are 2 main customer risks associated with customers: 1 – Habits of people change over time. 2 – Risk of the customer becoming too powerful and squeezes margins or white labels you're offering to control distribution – this is known as the Walmart effect.

13. War: Wars can impact supply chain or business decisions, and can be a major risk on a company, imagine what it would be like to run a business in Ukraine right now.

14. Currency: Currency of Inflation risk drives all other risks, as currency is the lifeblood of a company, business need to outgrow inflation to be profitable. In countries with collapsing currencies there is also the risk of capital control, the central bank can take your money and revalue it over night causing major risk for the companies using that currency. The following is a year-over-year chart of inflation.



15. Tax: Taxes are usually seen as a cost of business and come in various forms and can be altered at any time by the: State, County, National, Industry, Customs and Service.

16. Weather: Weather risks are unpredictable as well as seasonal, as there is no way to control the weather there is no way to control weather risks, all you can do is ensure you have plans in place to mitigate these risks.

17. Legal: Legal risks include current and future laws that impact your business, this section is closely tied to Employees as any action done by an employee impacts the business.

18. Tort: Tort claims are an extension of Legal risks, a Tort is a wrongful act, not including breach of contract or trust, that results in injury to another person's property or the like and for which the injured party is entitled to compensation. When an individual is harmed by another party without criminal intent, he or she may be able file a tort claim.

19. Patent: Patent risk can be defined as the assessment and quantification of the uncertainty and undesirable outcomes associated with the ownership of patents and use of patented technology. The idea of a Patent is to prevent others to use an idea, or to receive compensation when others use an idea.

20. Health: The concept of aging is a risk for a business, as humans and technology age the production of those assets' declines, this is known as a health risk for companies.

21. Life-Cycle: An individuals view of the world changes gradually over time, this can be perceived as a risk for the company as people's habits and tendences will change depending where they are in their life cycle. Life-cycle risk occurs when major events happen to someone life that make them rethink and often alter their priorities in life like the death or birth of a loved one, as well as major external events like war, COVID-19, where someone is in their life-cycle will determine how they react to various events, as an employer these factors need to be monitored and plans need to be in place to ensure risks don't cause business continuity issues.

22. Dilution: If a company fails to manage the above risks the outcome usually leads to dilution. A company will tend to issue new stock or absorb an equity liability as a result of failure to manage any of the above risks.

Section Summary

To sum up, human actions can pose a risk to your business. So, how can you reduce these risks?

The solution is to invest your resources in an asset that is not impacted or minimally impacted by human issues. Bitcoin is a technology that fits this criterion. Since Bitcoin doesn't have a CEO, board of governors, directors, or employees, it is immune to the human-related challenges that other businesses face.

As an independent currency, Bitcoin can easily move to a different jurisdiction if it encounters any regulatory or tax controls. Furthermore, Bitcoin's blockchain is immutable, which means that once a block is added to the chain, it cannot be removed or altered. This makes Bitcoin resistant to any actions by external entities that could dilute its value.

Part 6 – Bitcoin as an Investment for Companies

This section explores several reasons why companies have chosen to buy and hold Bitcoin.

1. Diversification: Bitcoin can be a good addition to a company's investment portfolio as it is not correlated with traditional asset classes, such as stocks and bonds. This means that it can help to reduce the overall risk in the portfolio.
2. Payment option: There are companies that have chosen to accept Bitcoin as a payment option for goods or services. This is beneficial to companies that do business internationally, as Bitcoin allows for fast, cheap, and secure cross-border transactions.

There are several reasons why adding Bitcoin to a company's balance sheet is viewed as a benefit for payments both in the present and in the future:

- Faster transaction times: Bitcoin transactions are generally processed much faster than traditional financial transactions, which can be slowed down by banks and other intermediaries. This means that payments made using Bitcoin can be completed more quickly, which can be beneficial for businesses that need to make or receive payments on a tight timeline.
- Lower fees: Bitcoin transactions often have lower fees than traditional financial transactions, which can save a company money on payment processing costs.
- Increased security: Bitcoin transactions are secured using advanced cryptographic techniques, which makes them less vulnerable to fraud and other types of financial crime. This can provide an additional layer of security for a company's payments.
- Global reach: Bitcoin is a global, decentralized asset that is not tied to any particular country or currency. This means that it can be used for payments in any part of the world, which can be beneficial for businesses that operate internationally.
- Future potential: While the value of Bitcoin can be volatile in the short term, it has the potential to appreciate in value over the long term. This means that holding Bitcoin on a company's balance sheet could potentially provide a financial benefit in the future.

3. Speculative investment: Some companies view Bitcoin as a speculative investment and choose to buy and hold it in hopes of making a profit as its price increases.
4. Store of value: Bitcoin is often viewed as a store of value, similar to gold. Some companies choose to hold Bitcoin as a hedge against inflation or as a way to preserve wealth.
5. Value added for employees and/or incentive for new employees - The inclusion of Bitcoin on a company's balance sheet can provide several benefits for current and potential employees, such as:
    - Increased financial stability: As the value of Bitcoin has the potential to appreciate over time, it can provide a financial benefit to the company, leading to increased profits and potentially higher salaries or other benefits for employees.
    - Improved employee benefits: Some companies may offer their employees the option to receive a portion of their salary or other benefits in Bitcoin, appealing to workers who are interested in owning Bitcoin or diversifying their investment portfolio.

- Increased job security: A financially stable and successful company is more likely to retain its employees and provide job security. Holding Bitcoin on the balance sheet can contribute to the company's financial stability and success, which in turn can provide increased job security for employees.
- Improved company reputation: A company that embraces new technologies and innovates may be viewed favorably by both customers and employees. The inclusion of Bitcoin on the balance sheet can signal that the company is forward-thinking and open to new ideas, which can improve the company's reputation and make it a more attractive place to work.
- Attracting tech-savvy employees: Bitcoin is a highly sought-after and valuable asset and its inclusion in a company's balance sheet may signal to potential employees that the company is forward-thinking and willing to embrace new technologies, making it more attractive to tech-savvy workers.
- Demonstrating commitment to diversity and inclusivity: Bitcoin is a global, decentralized asset not tied to any particular country or currency, making it an indication that the company is committed to diversity and inclusivity, which can be particularly appealing to a diverse workforce that values a global perspective.

Overall, the adoption of Bitcoin as a payment option and the inclusion of it on a company's balance sheet signals that the company is innovative, forward-thinking, financially sound and committed to diversity and inclusivity. It also can provide multiple benefits for the company, such as diversifying investments, faster transaction times, lower fees, increased security, global reach, improved reputation and employee incentives.

Satoshi gave us something, a place where we could win and a strategy where the individual and/or company could win. The strategy is: Withdraw your economic energy from the currency, which is the rigged system, and move it into a currency which is to your benefit.

Not only do you move your energy into a system that isn't continually bleeding you, but it also turns out that not only is Bitcoin not an inflationary currency, Bitcoin is a deflationary currency which is viral and getting stronger.

When you work as hard as you can and you sacrifice everything you have in order to support a weak currency that's collapsing, you just service the regime. When you put it into a semi weak currency, slowly weakening, you still just surrender your hope and your future when you put it into a deflationary currency, a currency that gets stronger as more people join, not only do you stop feeding the corrupt system, but you begin to strengthen the virtuous system.

Bitcoin gets stronger as more people join. Bitcoin gets stronger as you put more money into it. But Bitcoin also gets stronger as you put more creativity or innovation. Every single developer that builds a lightning app or builds a new improvement to Bitcoin makes the network stronger.

Every communicator and every creator, every time you create. Every single person that puts their vocational skill into this network makes it stronger. When you put your balance sheet in the network, you make it stronger. When you put your passion into the network, you make it stronger. When you bring your organization network, you make it stronger.

Part 7 - Closing Statement on Bitcoin:

The author has chosen to use a speech given by Michael Saylor at 2022 Atlas Society Gala as the closing statement.

“This is a story about the struggle of the individual against the collective and their gripping. That struggle exists today, what has changed is the technology. 100,000 years ago, an enraged human being could maybe kill ten other people. And today, an enraged human being can kill 100 million people. And so, as technology advances, our thoughts about ethics and morality and technology and civility have to evolve.

Today we struggle with the challenge of authority. Lord Acton said “absolute power corrupts absolutely”. And the only difference between absolute power today and absolute power 10,000 years ago is; Today, we have a company that listens to everything a billion people say. We have another company that answers the questions that 4 billion people ask. We have companies that deliver the food and all of the goods that you need to survive to hundreds of millions of people. We have one company that delivers all of the business software to 80 million corporations and directly serving billions and billions of employees.

Now, I ask you the question. If you got ejected out of the third biggest country in the world, or if I denied you privileges to live in any of the five largest countries in the world, would your life go on? Probably. Now, what if you actually got canceled by Apple, Amazon, Facebook, Google tomorrow? The question is, would your life go on?

Stop and think a little bit about what happens if they simply turned off your account, seized your photos, turned off your messages, took your documents. What if Microsoft just denied you access privileges? Could you run a business? Could you work? It's a big question we've never had to answer a hundred years ago.

So, the question really is, what happens if this goes on? Companies get bigger. Today, we've got big tech. Governments get bigger as the companies get bigger. When the company serves 3 billion people, then that means one bureaucrat can make one phone call to that company and potentially turn off all of the information flowing to all 3 billion people over the weekend. It's a new idea and it's a disturbing idea.

The story of Atlas Shrugged is the story of individuals struggling against the collective, and eventually they realize it's a corrupt and a rigged game and they can't succeed at it. And the solution that is offered is to withdraw from the corrupt economy. Should we just withdraw from a corrupt economy? Can we? Well, obviously, we haven't.

Another famous writer, Robert Heinlein, wrote “you don't win wars by dying for your country. You win wars by making the other guy die for his country”. We don't want to be martyrs, we want to be winners, this is the challenge we face today.

There's no point in going on strike unless you've formed a union first. Just going on strike without the organization in advance is just self-inflicted martyrdom. Bitcoin is a union. I'm going to leave the thought and continue with my speech. We'll come back to it at the end.

There's a freedom saga in the history of the human race. What is that saga? Somebody grows up, they struggle against the collective. Life is oppressive. They can't farm, they can't live, they can't. Worship. They can't celebrate. They can't breathe. So, what do they do? Well, they go over the horizon, beyond this horizon. We travel somewhere over the hill. After that, we go to the New World. We get in the ship.

What happens after you settle the New World while it gets too oppressive on the East Coast? Go west, young man, and we go west. We want to get away from too many politicians, too much government, too many well-intentioned individuals trying to help us with more laws, more government services.

We figured out how to send millions of people to the New World, and we sent millions of people west. But we couldn't send millions of people to the moon or Mars or the next habitable G-type star. Where is the next frontier for those thirsting for freedom?

Cyberspace, and here I pause and I ask you to like Steve Jobs said, think different. Thinking conventionally will get you killed. We will be martyrs. We will not be winners, right? If you want to die for your country or die for your cause, you can you can do that by thinking conventionally. If you want to win, you need to think unconventionally.

We have to embrace new paradigms in the 21st century. You can choose where to locate your body, your friends and family. You can choose where to locate your mind. You can spend your time on Twitch or Netflix or YouTube or Reddit or reading whatever you like. There are infinite options. You can be wherever you want to be, with any group. You want to be in cyberspace in your head.

You can also choose where to locate your business, your PNL, or where you generate cash flow in order to pay your expenses. You want that to be a streaming YouTube channel? You want that to be a bakery on Venice Beach? You choose. There are consequences.

And finally, you can choose where to place your wealth. That is, what will your bank be? How will you store your life savings? Every dime that you earn this year will be stored where you don't have to work, where you live and you don't have to think where you live and you don't have to store.

If you live in Venezuela and you make money, in Boulevard, or if you live in Argentina and you're making pesos, you don't have to save your pesos in an Argentine bank. You could choose to place your wealth in a different location than your business interest while your mind is in one place and your body is in another.

The idea of Crypto the great achievement of Satoshi Nakamoto is the concept of creating a truly decentralized network, giving it to billions of people. Allowing people to, in a decentralized way, protect that network, support that network, serve that network, benefit from that network, transcending the constraints of a CEO, a corporation, a country, a city, a company.

What if we could create something which is truly a utilitarian egalitarian, an economically and philosophically empowering computer network created on the strength of the power of cryptography.

Cryptography is a machine with a mechanical advantage. Instead of a Roman construction crane with 180 to one mechanical advantage that lets you move a one-ton block with your hands, we're talking about cryptography, where it becomes billions or trillions of times harder to break the code than it is to create the code. It's a trillion to one advantage. It's a quadrillion to one advantage. If you can create a mechanical advantage in cyberspace, then you can create something which is going to transcend and beyond the reach of the collective, and you finally have a tool with which to fight back.

Bitcoin is a shining city in cyberspace, and you can go there once you understand it.

Bitcoin and objectivism, they have a common cause. Ayn Rand in 1959 said,

“I'm for the separation of the state and economics, just as we add the separation of church and state”.

Whereas Hayek in 1984 said,

“I don't believe we shall ever have good money again before we take the thing out of the hands of the government. That is, we can't take it violently out of the hands of government. All we can do is, by some sly, roundabout way, introduce something that they can't stop.”

Clearly, both movements are thinking about separating economics from the state and from the collective. The difference is, for thousands and thousands of years, the technology for doing that was imperfect. The technology of gold to separate the power from the state doesn't work when they just shoot you and take your gold. The technology of cows or tobacco or fiat currency or buildings, they don't work that well to separate economics from the state. So, although this was an ideal and aspiration that, we never had the technology to realize it.

January 3, 2009 is the singularity. That's the point at which Satoshi Nakamoto developed the technology to transfer value through space without a trusted third party. Now, people say that a lot. They say he solved the byzantine general's problem. But if you can transfer something of value through cyberspace without a trusted third party, that means you can manifest something of value in cyberspace without a trusted third party. That means you can create and store and transfer energy in the digital realm.

The creation of digital property, digital money, digital energy, and digital matter where there was therefore affected. On January 3, 2009 most people don't realize this, but Satoshi opened a portal from the physical realm into the digital realm, and energy began to flow into cyberspace, bringing life to a formerly dead realm consisting only of shadows and ghosts. Bringing conservation of energy and matter, objectivity, truth, time, and consequence into the digital realm, delivering property rights, freedom, and sovereignty that is separate from the physical and the political realm to humanity.

Most of the world, myself included, ignored this chain reaction for the next decade. It happened. It flickered, it burned. We ignored it. Except for the OG Bitcoin cipher punks. And they can tell you that everybody thought they were crazy.

In March of 2020, the world came to a grinding halt. Suddenly, billions of people woke up to the prospect of an economic collapse, losing faith in their institutions and their governments. On August 10, the MicroStrategy struggling with this existential crisis adopts the Bitcoin standard. At that point, I concluded the road to serfdom is working exponentially harder for a currency growing exponentially weaker, and we saw an escape from economic slavery in the form of what we thought was digital gold. But as I've explained, it turned out to be much more than digital gold.

On September 18, after fully adopting the Bitcoin standard, and after talking to some more Bitcoiners, Michael Saylor had this epiphany, and posted the following:

“Bitcoin is a swarm of cyber hornets serving the goddess of wisdom, feeding on the fire of truth, exponentially growing ever smarter, faster, and stronger behind a wall of encrypted energy”

What it means is, for the first time in the human race, we have unleashed a freedom virus, a truth virus, we've unleashed a sovereignty virus, which is also a monetary virus. And as you know, and as Heinlein once said, “the only way to fight a virus is with another virus. You can't take it on.

Bitcoin is something special. Rather than removing your labor from a corrupt economy, you should remove your money from a corrupt economy. Bitcoin is a protocol to create free ideas, free economies

and free assets beyond the control of corrupt institutions. It's a fast, fair and equitable method to settle the differences of 8 billion people.

We say in the Bitcoin world, fix the money, fix the world. Look, there's 20,000 cryptos. There's one that's 95% dominant, which is ethically sound, technically sound, economically sound.

Most people don't know it. Most people are afraid of it. Never done that before. When we bought Bitcoin, MicroStrategy bought $250,000,000 worth of Bitcoin. No public company had ever bought any. People thought they were crazy. So, then MicroStrategy bought another $175,000,000. People thought they were crazy. Then MicroStrategy bought $600 million more.

People said, you can't stand on it. It'll destroy you. It's like standing on a bridge made of steel. And Michael Saylor concluded it's the perfect engineered material to solve our problem. But people are living in fear. And how are we going to get them too not be fearful? I was reminded of Andrew Carnegie's example. It's like, build the bridge. Go stand out in the middle of the bridge. You build an airplane, fly the airplane. Show people that it's not going to break.

That's what MicroStrategy did. they said, well, if it's good for 100 million, it's good for a billion. If it's good for a billion, we might as well go for 4 billion, right? And at some point, people will realize that they have more to fear by not embracing this technology than by embracing it.

Right now, it's a 400-billion-dollar asset. There are $400 trillion of other assets floating around in our current Fiat system. They're leaking energy, they're corrupt, they're inefficient. They're controlled by the collective. Bitcoin is 0.1% of the human race is liquid energy. 99.9% of the world doesn't get it. They're not there. That means you're still early.

So, plug in how ever you can, plug in yourself, your company, your organization, your agency, your product, your service, your family, or your ideology. I said to you at the beginning of the talk, Bitcoin is a union. The union gets more powerful as more people join. And in the war for the future of money, it's going to be won with money. As the money moves into the network, the monetary union gets more powerful. Everybody that joins the network has that much more power. And your only hope against the oppressive force of the collective is to unionize your own activities and organize your activities with people of like ideology that believe as you believe. More money, more people, more power.

So, in closing, Bitcoin is an economic machine based on a truth machine poised to emerge as a freedom machine. It's the best choice we have to save of our civilization.

Appendix I – Bitcoin properties

The following table grades Bitcoin, gold and fiat money (such as dollars) against the attributes listed in what is money section of this paper, and is followed by an explanation of each grade:

Traits of Money	Bitcoin	Gold	Fiat
Verifiable	High	Moderate	Moderate
Fungible	High	High	High
Portable	High	Low	High
Durable	Moderate	High	Low
Divisible	High	Low	Moderate
Scarce	High	Moderate	Low
Established History	Low	High	Low
Censorship resistant	High	Moderate	Low
Unforgeable Costliness	High	High	Low
***Openly Programmable**	High	Low	Low
***Decentralized**	High	Moderate	Low

Durability:

Gold is the undisputed King of durability. The vast majority of gold that has ever been mined or minted, including the gold of the Pharaohs, remains extant today and will likely be available a thousand years hence. Gold coins that were used as money in antiquity still maintain significant value today. Fiat currency and Bitcoins are fundamentally digital records that may take physical form (such as paper bills). Thus, it is not their physical manifestation whose durability should be considered (since a tattered dollar bill may be exchanged for a new one), but the durability of the institution that issues them. In the case of fiat currencies, many governments have come and gone over the centuries, and their currencies disappeared with them. The Papiermark, Rentenmark and Reichsmark of the Weimar Republic no longer have value because the institution that issued them no longer exists. If history is a guide, it would be folly to consider fiat currencies durable in the long term — the US dollar and British Pound are relative anomalies in this regard. Bitcoins, having no issuing authority, may be considered durable so long as the network that secures them remains in place. Given that Bitcoin is still in its infancy, it is too early to draw strong conclusions about its durability. However, there are encouraging signs that, despite prominent instances of nation-states attempting to regulate Bitcoin and years of attacks by hackers, the network has continued to function, displaying a remarkable degree of "**anti-fragility**".

Portability:

Bitcoins are the most portable store of value ever used by man. Private keys representing hundreds of millions of dollars can be stored on a tiny USB drive and easily carried anywhere. Furthermore, equally

valuable sums can be transmitted between people on opposite ends of the earth near instantly. Fiat currencies, being fundamentally digital, are also highly portable. However, government regulations and capital controls mean that large transfers of value usually take days or may not be possible at all. Cash can be used to avoid capital controls, but then the risk of storage and cost of transportation become significant. Gold, being physical in form and incredibly dense, is by far the least portable. It is no wonder that the majority of bullion is never transported. When bullion is transferred between a buyer and a seller it is typically only the title to the gold that is transferred, not the physical bullion itself. Transmitting physical gold across large distances is costly, risky and time-consuming.

Fungibility:

Gold provides the standard for fungibility. When melted down, an ounce of gold is essentially indistinguishable from any other ounce, and gold has always traded this way on the market. Fiat currencies, on the other hand, are only as fungible as the issuing institutions allow them to be. While it may be the case that a fiat banknote is usually treated like any other by merchants accepting them, there are instances where large-denomination notes have been treated differently to small ones. For instance, India's government, in an attempt to stamp out India's untaxed gray market, completely demonetized their 500- and 1000-rupee banknotes. The demonetization caused 500- and 1000-rupee notes to trade at a discount to their face value, making them no longer truly fungible with their lower denomination sibling notes. Bitcoins are fungible at the network level, meaning that every Bitcoin, when transmitted, is treated the same on the Bitcoin network. However, because Bitcoins are traceable on the blockchain, a particular Bitcoin may become tainted by its use in illicit trade and merchants or exchanges may be compelled not to accept such tainted Bitcoins. Without improvements to the privacy and anonymity of Bitcoin's network protocol, Bitcoins cannot be considered as fungible as gold.

Verifiability:

For most intents and purposes, both fiat currencies and gold are fairly easy to verify for authenticity. However, despite providing features on their banknotes to prevent counterfeiting, nation-states and their citizens still face the potential to be duped by counterfeit bills. Gold is also not immune from being counterfeited. Sophisticated criminals have used **gold-plated tungsten** as a way of fooling gold investors into paying for false gold. Bitcoins, on the other hand, can be verified with mathematical certainty. Using cryptographic signatures, the owner of a Bitcoin can publicly prove she owns the Bitcoins she says she does.

Divisibility:

Bitcoins can be divided down to a hundred millionth of a Bitcoin and transmitted at such infinitesimal amounts.

A Satoshi is the smallest unit of Bitcoin, named after the pseudonymous creator of Bitcoin, Satoshi Nakamoto. One Satoshi is equivalent to 0.00000001 Bitcoin (BTC), or one hundred millionth of a Bitcoin. In other words, 100 million Satoshis make up one Bitcoin.

The use of Satoshis allows for the division of Bitcoin into smaller, more manageable units, which is important given the high value of Bitcoin. For example, if the price of Bitcoin is $50,000, one Satoshi would be worth $0.0005.

Fiat currencies are typically divisible down to pocket change, which has little purchasing power, making fiat divisible enough in practice. Gold, while physically divisible, becomes difficult to use when divided into small enough quantities that it could be useful for lower-value day-to-day trade.

Scarcity:

The attribute that most clearly distinguishes Bitcoin from fiat currencies and gold is its predetermined scarcity. By design, at most 21 million Bitcoins can ever be created. This gives the owner of Bitcoins a known percentage of the total possible supply. For instance, an owner of 10 Bitcoins would know that at most 2.1 million people on earth (less than 0.03% of the world's population) could ever have as many Bitcoins as they had. Gold, while remaining quite scarce through history, is not immune to increases in supply. If it were ever the case that a new method of mining or acquiring gold became economic, the supply of gold could rise dramatically (examples include **sea-floor** or **asteroid mining**). Finally, fiat currencies, while only a relatively recent invention of history, have proven to be prone to constant increases in supply. Nation-states have shown a persistent proclivity to inflate their money supply to solve short-term political problems. The inflationary tendencies of governments across the world leave the owner of a fiat currency with the likelihood that their savings will diminish in value over time.

Established history:

No monetary good has a history as long and storied as gold, which has been valued for as long as human civilization has existed. Coins minted in the distant days of antiquity **still maintain significant value today**. The same cannot be said of fiat currencies, which are a relatively recent anomaly of history. From their inception, fiat currencies have had a near-universal tendency toward eventual worthlessness. The use of inflation as an insidious means of invisibly taxing a citizenry has been a temptation that few states in history have been able to resist. If the 20th century, in which fiat monies came to dominate the global monetary order, established any economic truth, it is that fiat money cannot be trusted to maintain its value over the long or even medium term. Bitcoin, despite its short existence, has weathered enough trials in the market that there is a high likelihood it will not vanish as a valued asset any time soon. Furthermore, the **Lindy effect** suggests that the longer Bitcoin remains in existence the greater society's confidence that it will continue to exist long into the future. In other words, the societal trust of a new monetary good is asymptotic in nature, as is illustrated in the graph below:

If Bitcoin exists for 20 years, there will be near-universal confidence that it will be available forever, much as people believe the Internet is a permanent feature of the modern world.

Censorship resistance:

One of the most significant sources of early demand for Bitcoins was their use in the illicit drug trade. Many subsequently surmised, mistakenly, that the primary demand for Bitcoins was due to their ostensible anonymity. Bitcoin, however, is far from an anonymous currency; every transaction transmitted on the Bitcoin network is forever recorded on a public blockchain. The historical record of transactions allows for later forensic analysis to identify the source of a flow of funds. It was **such an analysis** that led to the apprehending of a perpetrator of the infamous MtGox heist. While it is true that a sufficiently careful and diligent person can conceal their identity when using Bitcoin, this is not why Bitcoin was so popular for trading drugs. The key attribute that makes Bitcoin valuable for proscribed activities is that it is "permissionless" at the network level. When Bitcoins are transmitted on the Bitcoin network, there is no human intervention deciding whether the transaction should be allowed. As a distributed peer-to-peer network, Bitcoin is, by its very nature, designed to be censorship-resistant. This is in stark contrast to the fiat banking system, where states regulate banks and the other gatekeepers of money transmission to report and prevent outlawed uses of monetary goods. A classic example of regulated money transmission is capital controls. A wealthy millionaire, for instance, may find it very hard to transfer their wealth to a new domicile if they wish to flee an oppressive regime. Although gold

is not issued by states, its physical nature makes it difficult to transmit at distance, making it far more susceptible to state regulation than Bitcoin. India's **Gold Control Act** is an example of such regulation.

Bitcoin excels across the majority of attributes listed above, allowing it to outcompete modern and ancient monetary goods at the margin and providing a strong incentive for its increasing adoption. In particular, the potent combination of censorship resistance and absolute scarcity has been a powerful motivator for wealthy investors to allocate a portion of their wealth to the nascent asset class.