

The Power of Money: A Case for Bitcoin

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This treatise is presented freely to all. Constructive feedback is welcome.

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Chapter 1: Introduction

Background

I had begun to read about Bitcoin roughly 4 years ago - mostly in the comments sections of financial websites that I favored. On the whole, the posts I read seemed like the ramblings of fanatics, and so while they were entertaining, I dismissed them from serious consideration. Surely the massive run in Bitcoin's price was just today's computer-age-version of a bubble scheme. I thought briefly about buying some as pure speculation, but decided against it. I've never been much of a gambler.

The stock and bond markets had long since frustrated me - it had for the past several years become a sucker's game. Fundamental valuation no longer mattered. Even technical analysis no longer mattered. All that mattered was what Central Banks and those 'in the know' decided to do. It was an increasingly open secret that the game was rigged – and there didn't seem to be any alternatives. It was depressing. I could try and play-along (by trying to anticipate the Central Banks' activities), but it didn't feel right. I didn't really want to be part of it, so I proverbially 'sat on the sidelines'.

It wasn't until earlier this year, when JP Morgan announced its 'Ethereum Alliance' (along with Microsoft and Intel) that my ears perked up again. These were major and influential corporations with significant resources - and they were interested in blockchain technologies. They must see something I thought – but what?

I began doing my own research, and investigating blockchain – what it is, and how it worked. I assumed that I had probably 'missed the boat' on Bitcoin, but thought that maybe I hadn't yet missed the boat on these other crypto-currencies that were springing up. There were quite a few of them, and as I investigated, I found that I could use my knowledge of finance and deductive reasoning to break them down and arrive at valuations.

I was going to begin with ETH, but before I could dig into the concept of 'smart-contracts', a different Alt-coin got my attention – Ripple. My quick 'back of the envelope' math showed me it could be easily worth a lot more than then current levels – and I didn't even need to get into the more esoteric concepts of blockchain. I knocked out an analysis and posted it on my new blog. It got a reasonably favorable response, and I was ready to dive back into ETH.

But then I noticed another coin – one whose marketing struck me as sufficiently suspicious such that I wanted to examine it more closely. "I'll just do this quick report" I told myself, "and then get back to ETH". But after that it was an email from a blog-reader asking me about another coin – TenX. So I knocked out another treatment. Suddenly there were lots of distractions. New Alt-coins were springing up every day – from scammers and genuine entrepreneurs alike. There was clearly *something* to this concept of blockchain that was feeding all this activity. But what exactly was *it*?

I decided to go back to first principles, and try to understand what was happening. I wanted to know what it *all really meant* – as I felt that without a grasp on that, any investing I did in this space would be nothing more than gambling. I could also feel that there was something bigger happening, and I wanted to see it more clearly. I don't know exactly how it began coming together – in some ways it seems that I had been collecting the pieces to this jigsaw puzzle for the last ten years or more - but once I made it my intention to try and 'figure this stuff out', the pieces began falling into place.

It was a daunting task though. I could see the finished product in my mind's eye and I knew it would take time and a lot of energy. Months at least, maybe longer – especially considering it would have to be done on nights and weekends. But it seemed like every day I saw another article discussing

Bitcoin and Altcoins and in my view, missing the point. Even worse, I watched as institutions with a vested interest in undermining Bitcoin produced reports and summaries that seemed at best simply unfair, and at worst disingenuous and misleading. I felt increasingly clear what the big story *was*, but there would be only one way to truly find out for sure – get this piece done and share it.

I've put my heart into this work. It is my sincere wish that it provides the insight sufficient to inspire.

3 Core Truths

As a rule, all advanced social structures need money to function¹. We'll explain the reasons for this as well as explore what money fundamentally *is*, but the intention of this essay is not merely to inform on history and functional definitions. Instead, it is to inspire an awareness of three core truths. They are:

- 1) The selection of *what* we use as money has a profound effect on some of the most fundamental ways in which we live our lives.

This may strike you as an odd or even bizarre statement to make, but I hope that by the end of this analysis you will realize and agree its truth.

- 2) Our current system of money is exceedingly imbalanced – and as such does an exceedingly poor job of supporting our individual and collective human journey.

The world's current monetary system is fraught with perverse imbedded incentives and moral hazards that inevitably lead to massive social and political imbalances. Many of the local, national and global ills we see today are the late-stage consequences (and co-incidents) of having such a warped system of money. Colloquially, we all *know* this – at least insomuch as we make reference to it in common speech. Any reporter worth his weight will tell you that when looking to uncover corruption and scandal, you simply need to *follow the money*. Religious literature points to the same theme when it declares money 'to be the root of all evil'. Perhaps no one expressed the sentiment better in modern times than 20th Century Automobile magnate Henry Ford when he said²:

"It is perhaps well enough that the people of the nation do not know or understand our banking and monetary system, for if they did I believe there would be a revolution before tomorrow morning."

- 3) We all have an opportunity to transform our world in enormously positive ways, simply by deciding to adopt a form of money different from that which we have been conditioned to accept.

Many of us are troubled by ills and injustices we see around us in society on a daily basis. There is no shortage (and perhaps never will be) of those calling for revolution in one form or another. I do not advocate for revolution. A revolutionary approach only breeds a changing of the guard, not growth out of the system of oppression itself. In even the most 'successful' revolution the oppressors eventually become the oppressed, and the oppressed the oppressors. George Orwell beautifully demonstrated this mechanism in his novel *Animal Farm* where the pigs ultimately become indistinguishable from the men. The rock band 'The Who' expresses the sentiment even more

¹ As with all rules, there is always one exception to prove it! We will address that exception shortly but suffice it to say that the exception is sufficiently aberrant relative to our modern conception of society as to be effectively excluded.

² The quote was attributed to Mr. Ford by the late Congressman Charles Binderup.

succinctly when they proclaim, “Meet the new boss – Same as the old boss.” This is not true progress.

Instead, I advocate for evolution. Evolution begins with honestly and directly assessing the current situation – a tall order for sure, but achievable for many. Action may ultimately be taken in some form, but as it was birthed through awareness and not resistance, it leads to a new state of balance – not an endless repetition of the old fruitless cycles. That we have the ability to facilitate the evolution of our world through an act as simple as deciding to accept something different ‘as money’ is to me, nothing short of miraculous.

Bitcoin Vs. Altcoins

Ironically, as you no doubt can tell from this piece’s title, I’ve returned to ‘the boat that I thought I had missed’ – Bitcoin. In this treatise, I will speak of Bitcoin here as the representative of all Cryptocurrencies. There is much to be said about Alt-coins, but I have reached the (tentative perhaps) conclusion that they – while in some instances may be incredibly valuable (and no doubt may yet make many people wealthy in a traditional sense) – are best approached as providing ancillary functionality to the Bitcoin ecosystem.

Some people assert that since new crypto-currencies can be created at any time (as evidenced by the hundreds of new alt-coins) that the value of any *one* (such as Bitcoin) is vulnerable to dilution and displacement. This is incorrect, as it presupposes that through sheer volume of additional offerings, ‘one or several’ will inevitably displace Bitcoin’s dominance. Once an appreciation for *the power of money* is gained, it will be clear that not only are the minimum technical requirements to serve as global money already contained within the current Bitcoin protocol and support architecture, but its ubiquity, market position, and ethos are sufficient to maintain its relative position and role. This is not to say that other coins lack importance or critical functions. In fact, security concerns surrounding Bitcoin’s adoption have led me to include an analysis of one additional Altcoin which I feel has a vital role to play. I address this other coin in the Epilogue.

Quick Overview

This paper is organized into 10 chapters and an Epilogue. I’ve done my best to only include pieces that are necessary to the progression of the narrative. As such, I recommend trying to read it in order without skipping sections. Even if you don’t absorb all the detail along the way, simply following through all the steps *once* can inform greatly. That being said, some of it (particularly in Chapter 5) gets a bit technical and isn’t for everyone. For those who might otherwise find it too daunting, I’ve included TLDR/Summaries just prior to diving into the more complicated sections, as well as some bolded summaries after their completion.

We start our next chapter with what might seem like a simple question - ‘What is Money?’ We quickly realize that answering it requires a bit of exploration. From there we walk through the elements of trade, barter, and how barter may be improved upon by introducing money. We discuss the different broad categories of money, and introduce the concept of the money-supply being controlled by a small elite group, the situation we find ourselves in today.

We then take an apocryphal story-ride, following the use of gold as money - from its most basic forms to advanced monetary schemes and beyond. Doing this gives us the technical and narrative context necessary to understand the problems we face today with our current fiat money systems.

This then brings us to a discussion of Bitcoin itself, including what I consider to be the ‘bigger picture’. We discuss practical approaches for facilitating Bitcoin adoption, a valuation framework, and finally concluding messages.

While I had wanted to refrain from discussing any Altcoins in this treatise, the need to address privacy concerns and the game theory surrounding it led me to do so. The epilogue discusses privacy and the use/valuation of what I believe to be an integral altcoin in the Bitcoin ecosystem.

Disclaimer

This paper is not intended as investment advice. While there may be opportunities within it to see valuation and investment opportunities, the onus is on you the reader to determine whether the arguments have merit, and if or how you should translate them into action within your own personal life. Everybody’s circumstances are different, and what might be right for one person may be wrong for another.

While I outline practical steps which I believe will facilitate Bitcoin adoption (including generically buying Bitcoin), there remain many risks that I may not have covered. One or many of my assumptions may prove incorrect, and unforeseen events could occur resulting in drastically different outcomes than those which I describe. I do not have a crystal ball. To the extent that you can, do your own work. Ask questions. Get informed. The importance of deciding to be as responsible as you are able to be for your own experience cannot be overstated.

Chapter 2: What Is Money?

If a child were to ask you this question – the answer to which is something seemingly so obvious – you might be surprised to find yourself at a loss to explain it in depth. You might reach into your wallet and take out a piece of paper with symbols on it, or show them your phone or computer screen (assuming you were logged into a money account of some sort). But if you were to do so, you would likely realize that your efforts fall short, as you are only pointing to a demonstration of money, not addressing its core definition. It turns out that asking *what money really is* is not a childish question at all – but something deceptively adult. For most of us, its definition lives at the outskirts of our awareness and we may spend our entire lives never grasping its nature.

The Core Definitions

Money at its existential and philosophical core has two definitions – one that is both as evolved as it is simple, and another that breeds materialism and devolution. Unsurprisingly, it is the latter with which most of us are familiar, and so we begin with that.

Money Definition #1: the base version

Money is the promise of our desires satisfied.

While things like coins, bank notes and screen balances are often pointed to as being money, they are in truth just the symbolic representations of money³. Without the promise of ‘desires being satisfied’ behind it, a bank note is nothing more than an inked piece of paper and a coin is nothing more than a (usually base) metal with an imprint. These things are coveted not because of what they are physically, but the intangible thing that they represent.

³ These things are *currencies* which is a term we will formally define and address.

With money, we believe we can *get what we want* - whatever it is we desire. Of course we may tell ourselves saying and slogans like 'money can't buy happiness' or 'money can't buy love' – but few people viscerally believe this. If we truly believed we couldn't acquire love and happiness (even a little bit) with money, our behavior in the world would likely be vastly different that it is today.

Money, as the promise of wants satisfied, is the ultimate carrot – that with which no amount of sticks can every truly compete. Mayer Rothschild realized this, which is why he famously said:

“Give me control of a nation's money and I care not who makes the laws.”

Rothschild understood the power of money and with this knowledge was able to build a multi-generational dynasty. His power through mastering money (whether by his physical descendants or simply inheritors of his legacy) has been maintained by keeping those who are controlled by it ignorant of its importance and mechanisms.

While dictators and strongmen have used brute force throughout the ages to corral and control the masses, these efforts are always eventually undermined by violent upheaval. You cannot push the people aggressively in one direction without expecting that they will eventually push back. House-slaves who are pressed into service by force and threat always remain at risk to escape or rebel.

What Rothschild realized was that if you control money – the promise of wants satisfied – you can motivate people to do your bidding *even if it's ultimately against their best interests*. This is an enormous power, greater than any brute force weapon or threat thereof can confer upon its owner. In fact, this power is so great that to keep it in the hands of men is to invite corruption and disaster.

With money, one can create the perfect house-slave. Rather than scheming at night over ways to escape captivity, he instead dreams of acquiring more money and 'stuff' that will satisfy all of his wants - except of course for true freedom which is now seen as of insignificant importance. Rather than connecting with the true inner nature of the world around him, he is entranced by a materialism that weakens his connection to spirit and makes him vulnerable to exploitation. This is the world into which we have all been born – even those who find themselves seemingly at the helm of these mechanisms. That the masters are themselves slaves to a mode of awareness which keeps them from realizing broader truths is a secret hidden in the best possible place to remain undiscovered - plain sight.

Money Definition #2: the simple yet refined form

Money is a tool that facilitates equitable trade between humans.

Humanity has been engaged in trade for all of recorded history (and then some). It's no coincidence that archaeologists often look to 'ancient trade routes' as the earliest markers of civilization. Even in the simplest forms of societal existence, different people have access to different resources. It is only natural then that humans developed the drive to trade these resources. That humans generally have a concept of what is 'fair' and mutually beneficial speaks to higher innate aspects of our species.

When money is appreciated in this way – as a tool to facilitate fair trade – many (if not most) of the ills associated with money (as the 'root of all evil' for instance) fall away. As such, while we acknowledge that no amount of discussion or debate can change the fact that many people *viscerally* subscribe to the first definition, for the purposes of aspiration and elucidation we will adhere more closely to the latter definition.

Depending on your background (and exposure to economic theories) you may already be questioning this money definition as being functionally too broad. Indeed it is, but was purposefully left so to express the basic sentiment. We can and will refine this to arrive at a more robust workable definition. We will do this by going back to basics, and starting with the one societal scenario where money is *not* necessary.

Back to Basics

If you and your immediate family were to live on a farm and not only be entirely self-sufficient, but have *no desire* for anything that you couldn't provide for yourselves, then you wouldn't need money at all. Even more simply, you wouldn't need to *trade* with anyone else. Assuming it was a 'traditional' family of mother, father and kids, then the parents would dole out work responsibilities, and the family could all share evenly in the benefits.

Well, actually, not entirely evenly. After all, giving an *exact* equal portion of everything to each family member would not only be impractical, but probably sub-optimal. Should the baby's bedroom be as big as the parent's bedroom? Should everyone at the supper table be given an exact equal portion of food, despite body sizes (and appetites) ranging widely? Probably not. But assuming the family more-or-less gets along, these small discrepancies can generally be looked past and worked through. Everyone (more-or-less) agrees on what chores need to get done, and how to share the benefits amongst themselves. Money is unnecessary in this scenario - a life without trade.⁴

However, if the family wants to acquire goods or services from people in the outside world, things get more complicated. They can of course politely ask others for 'stuff', but this approach is likely to hit a dead-end quickly. After all, one cannot consistently rely upon outsiders giving 'stuff' to you without some sort of value exchange (and no matter how politely you ask). This is now beginning to approach a description of the world in which we live – a world *with trade*.

Enter Barter

The simplest way to engage in trade is through barter. Barter is simply the exchanging of some goods and services for other goods and services. But barter has limitations of its own that prevent it from being scalable in a larger economy (and over time). Let's quickly run through a few of them:

- Bartered items may have uncertain value.

Since barter items have value mainly in their perceived utility (how the 'buyer' thinks they can use and/or appreciate the item), the perspective of the person you are looking to swap with matters greatly. If the other person doesn't have immediate use or interest in the particular item you're trying to barter, you're out of luck. Furthermore, if the item you're looking to barter has an expiration date (say for instance, a liter of milk), then you only have a limited window within which to try and trade it (i.e., before it spoils).

- Bartered items are (generally) not divisible and therefore, not easily transactable in terms of relative value.

⁴ Technically, if we switch things up just a little bit, we see that trade actually can happen (albeit subtly) even in our family example. For instance, maybe the teenage son is given a bigger portion of food at supper but he's also expected to use his physical size and strength to perform more of the hard manual labor on the farm than his sisters. Let's be romantics though and assume that in this particular family, 'more' is given when asked simply out of unconditional love. Alternatively, we can simply define 'trade' as happening between family/living units, and not within them.

If you wanted to buy a loaf of bread and all you had was a Van Gogh painting, you'd be in a tricky position. You wouldn't want to swap the painting (presumably worth a fortune) for a single loaf of bread. But you also can't "break off a tiny piece" of the painting to buy the bread. Because the painting is not divisible (without dramatically reducing its worth) – it's by and large an all or nothing situation.

- Bartered items may have other attributes making them difficult to use in general trade.

Away from the examples we've already used above, there are more that can be problematic. For one, how about transportation of your goods? If you had to barter for *everything*, then you would presumably be carrying all your 'stuff' with you wherever you went intending to trade. This could quickly become very costly and cumbersome. After all, what good is a Van Gogh painting to someone else if by the time you brought it to market it's been damaged from the journey?

And so, we come to a solution to these problems of barter: money.

Our Final (Functional) Definition of Money

Money is a thing that through physical and/or symbolic representation solves some (if not all) of the limitations of trade using the barter system.

This is admittedly a mouthful, so let's walk through it in pieces to break it down.

Money is a thing...

Being 'a thing' is the only requirement to *be* money – so long as the qualifying criteria are met. Where this thing comes from or what it looks like doesn't matter. It could be something a child crafted in the sandbox. It could be something sent from a far off inter-planetary dimension as a nebulous thought-form. It could even be a series of zeros and ones in a complex computer network. The point is, if this thing satisfies the rest of the definition's criteria, then this thing *may be considered money*. Furthermore, if this thing does a *better* job than say, Dollars, Gold or Bitcoin in satisfying the rest of the definition, then this thing is *better money* than those alternatives.

...that through physical and/or symbolic representation...

All this is saying is that the thing which we are considering as money is ultimately *represented* by something else.

Odds are that if I offered to give you a piece of paper with a bunch of ink on it you wouldn't get too excited. But you would likely be much more interested if I told you that this paper had the precise color of green and exact letters, numbers and symbols to make it look like a 100-hundred-dollar bill. When you hand someone a dollar bill it's treated with value because through the physical item handled, some *other* value is being *represented* – namely the perceived money of dollars. Whether you handle physical paper currency or transfer balances on-line from one account to another, you are ultimately moving symbolic representations of some 'thing' (dollars in our case).⁵

⁵ Interestingly, there are many instances where the physical item itself may have value away from its symbolic representation of money. If the date on any of your dimes (American 10 cent pieces) is 1952, then odds are good that that dime is minted out of 90% actual silver (as opposed to cheaper metals). With the current value for pure silver being around \$16 an ounce, its pure silver value would be worth about \$1.25. You could also deposit it in your bank for 10 cents - but why would you?

...solves some (if not all) of the limitations of trade using the barter system.

This last piece of the definition is purely functional - it's all about solving problems of barter-trade, and implicitly leads us to an interesting conclusion:

- There can be many types of money, and of varying qualities.

Using a money of 'lower quality' (presumably solving fewer of the problems of barter-trade) can be done, but it exposes you (sooner or later) to problems that might otherwise be avoided by using 'higher-quality' money.⁶ Let's refer to how well something satisfies our definition of money as that thing's 'moneyness'. Things that express a high degree of 'moneyness' may be considered 'high quality' or 'sound' money.

Moneyiness

So what makes for 'high quality money'? What are the traits that allow some thing to solve the problems of barter-trade, and therefore be considered sound money – having a high level of moneyness? It turns out there are 3 main characteristics which when well-addressed, generally cover the scope of problems associated with barter-trade.

Characteristic 1 of 3: Serve as a store of value

There are two primary aspects to being a store of value:

- 1) The thing we use as money can't be perishable.

Remember our first example of barter, using a liter of milk as the bartered item? Well milk is *not* a stable store of value because it changes state very readily. It might start out as milk, but depending on circumstances, it can spoil, turn to butter, or even turn to cheese. Whatever we use as money, in order to be a stable store of value must not expire, corrode or decay.

- 2) It has to be of a sufficiently limited supply.

When it comes to valuing some thing as a potential candidate for money, this is especially critical. If new units of the thing can be produced frequently enough, then its usefulness as money may deteriorate drastically. A *bit* of new supply *may* be ok⁷, but thousands of years of (repetitive) human history has proven that when you go beyond that you are sowing the seeds of a money system's demise. We will explore this critically important concept more fully in the next section.

One additional note here regarding the concept of store of value is worth making. Price volatility is *not* a component of the Store of Value moneyness assessment. Price volatility makes broad *adoption* of something as money more challenging than it might otherwise be, but this is a separate issue⁸. Thought of differently, one could rightly argue that the volatility of Bitcoin in terms of fiat currency

⁶ Some people (known as 'gold bugs') assert that 'gold is money'. I don't disagree, and we'll in fact explore gold in more depth shortly. But money isn't exclusively gold. There are other types of money – some better (and worse) than others. As such, I would rephrase the statement of 'gold is money' to 'gold is a high-quality form of money.'

⁷ New supplies of 'money' *can* at times be introduced to systems without causing imbalance. If allowed to persist though, they all ultimately result in the same place – catastrophe.

⁸ This relates to the characteristic of medium of exchange, and is temporary with continued adoption.

might just as easily be interpreted as the volatility of fiat currencies *in relation to Bitcoin*. Considering how relatively poorly fiat currencies pass moneyness tests, this has significant intuitive and theoretical appeal. Of course, the main difference between the two perspectives is that currently, the bulk of 'price points' for assets are denominated in fiat currencies, giving the illusion of stability in fiat over short time horizons. If and as this changes (with sellers of goods and services pricing their wares in Bitcoin) we will see this fall away.

Characteristic 2 of 3: Serve as a unit of account.

This is a trickier sounding one, but for all intents and purposes, we can keep it simple by answering this question:

Can you measure 'stuff' in terms of this thing that you are proposing to use as money?

We *can* do this with dollars. Whether it's a wide-screen television or a steak dinner, we can represent all sorts of 'stuff' in terms of dollars. The television might be represented (or valued) at 1,200.99 dollars, and the steak dinner might be accounted for as 24.95 dollars.

It may seem that we could even do the same with milk! After all, couldn't we say the television is worth 436.72 gallons of milk, and the steak dinner is worth 9.07 gallons of milk?

Well, we could *try*, but we'd run into some problems (away from milk not being a stable store of value). We might ask what *type* of milk? Whole, low-fat, or skim milk? Were the cows free-range or factory milked? Are all the milks plain unflavored, or are some chocolate milk?

In order for something be a suitable 'unit of account', that thing must be *uniform*. Any unit of the 'stuff' you are using as money must be *exactly the same* as another other unit of the 'stuff', with the only acceptable differences being quantity or magnitude. There is no functional difference between a \$1 bill I receive as change from a local shopkeeper and a \$1 dollar bill I receive upon withdrawing it from my bank account.

Furthermore, the thing that we use as money must be able to be fractionally divided such that the sum of all its components exactly equals the value of them all put together. Yet again, this probably sounds either silly or confusing, so let's revisit a previous example we used when talking about barter – a Van Gogh painting (while noting that classic art generally serves as a poor unit of account). You cannot break a Van Gogh painting worth \$100 million in half and expect to sell each piece for \$50 million. Odds are, you will have simply destroyed most of the value. The pieces of a broken Van Gogh painting do *not* equal their value put together. Alternatively, if you have 100 of 1 dollar bills, you would have no issue (from a value perspective) of exchanging them for a single 100-dollar bill.

Characteristic 3 of 3: Serve as a generalized medium of exchange

The thing to be used as money, (or its functional representative, whether that be paper bills or electronic accounts) must be practical and easy to use for trade.

Fine art (to stay with the earlier example) is generally a poor generalized medium of exchange because in order to protect its value, it must be protected from the elements, which requires (expensive) effort. It's also not very easy to transport, and as we've already seen can't be used to 'make change'.

There are all sorts of features that make for a better medium of exchange – transportability, durability, value density to just name a few. We'll go through some more detail on these when we examine gold and then cryptocurrencies.

It may seem at this point that many different things could be used as money, and used successfully. However, upon examination it turns out that very few things in our world ‘tick the boxes’ of serving as high quality money.⁹

While this basically covers all the aspects of money, I would like to re-draw your attention to one particular characteristic - store of value – and more specifically to how this may be determined by a money’s supply. While all other elements of money are valid in their own right, *the corruption inherent in the current monetary system hinges on this one aspect*. There are effectively two possibilities for money regarding supply - both with very different implications and consequences.

Something used as money can either be of a fixed (or near fixed) supply, or an un-fixed supply of money.

The full consequences of having a fixed money supply have rarely if ever been realized throughout human history – at least not for extended periods of time. This is because the temptation for those in power to assert control over the money supply (and therefore bestow upon themselves the ability to create more units of money at will) is generally irresistible.

Nevertheless, instances throughout history where a fixed-supply approach to money was honored have generally been periods of *relative* economic and social balance. This is in stark contrast to the alternative scenario of an un-fixed money supply which history has shown over and over again always ends in repression, violence and despair. While we will not spend much time now discussing the direct details and implications of having a fixed money supply, we can for now assert that most if not all of the problems of having an un-fixed money supply (which we are about to discuss in greater depth) can instead be avoided. It turns out that avoiding disaster is quite a strong selling point.

Chapter 3: Dangers of An Unfixed-Money Supply

To demonstrate the perils of having an un-fixed money supply, we must differentiate and then explore the two main types. Once that is done, the dangers inherent in both systems should become clear.

Type 1 of Un-Fixed Money Supply

- 1) The mechanism for addition/creation of new units of money to the economy is accessible to a large percentage of the populace.

An example of this would be if we decided that leaves were to be used as money. By the unit of money being leaves (yes, the kind that grow on trees), it would be within nearly everyone’s grasp to create new units of money for their own benefit. It would make sense (at least initially) to plan a trip to the woodlands, where you could spend an afternoon collecting wild-leaves. Once your basket was full, you could return to town and use these leaves to acquire goods and services - effectively introducing this new money into the economy.

The consequences of this type of activity though would be (as you might already realize) disastrous. As everyone has the power to ‘create new money’, all it takes is a little bit of time and standard human behavior/motivation and the monetary system would collapse in hyperinflation. The amount

⁹ The one that throughout the ages has done the best job (and which we discuss at more length shortly) is gold.

of leaves brought into the economy would soar, causing their purchasing power to plummet. Soon, even wheelbarrows full of money (leaves) would be insufficient to purchase even the most modest of goods or services. As such, we can effectively disregard this scenario as being entirely unworkable (as it would self-destruct enormously quickly). We instead bring our focus to the second type of an un-fixed money supply, as this is the one the world is currently facing. This type will remain a prime focus of our attention.

Type 2 of Un-Fixed Money Supply

- 2) The mechanism for addition/creation of new units of money to the economy is accessible to a small minority of the populace.

To illustrate this simply, let's modify our leaves-as-money example slightly. Let's suppose that it isn't normal leaves that are money, but special *blessed-leaves*. That is, there is a caste of priests (who make up only a small percentage of the total population) that has the power to 'bless' leaves and turn them from just a normal leaf, to one that is usable as money. Once a leaf is blessed (and embedded with an anti-counterfeit chip) it becomes money.

The benefits of having a priestly caste as the only ones who can 'bless leaves' and so create new money are two-fold. The first benefit to the public, and the second benefit to the priestly caste themselves. Unfortunately, what benefits the priestly caste serves to the detriment of the public, as we will see.

For the public benefit, as long as the priestly caste doesn't act recklessly, the amount of new leaves which enter the system can remain relatively subdued – keeping the threat of hyperinflation very low. Of course, this same benefit of avoiding hyperinflation (and the knock-on destabilising effects of it) could be achieved by one in which the supply of money is fixed. Nevertheless, without hyperinflation (or its imminent prospect) the average citizenry can live and operate with a fair degree of economic stability (for a time)¹⁰.

For the priestly caste the gain is potentially stupendous. With the power to bless-leaves and thus create new money at will, they wield the power of the 'ultimate carrot' – being able to motivate nearly anyone to surrender their real property and/or do their bidding by offering up newly created money - the promise of wants satisfied.

"Give me control of a nation's money and I care not who makes the laws." – MA Rothschild¹¹

The Three Masters-of-Money Commandments

There are however, three constraints on the power of that small selected group who controls the money supply. While we have referred to them as 'priests' in our previous example, and will continue to do so at times, they may also be more generally herein referred to as the Masters of Money, or MoM. If these three constraints are not honored, the MoM's power will be short-lived (if lived at all). As homage to the late Notorious B.I.G.¹² we will refer to these constraints as The Three MoM Commandments.

¹⁰ As we will see though, although immediate hyperinflation is no longer a high risk, long-term inflation and its consequences remains not only a risk, but a certainty.

¹¹ I know that I am repeating the quote. Please allow me some leeway for introducing what I see as appropriate dramatic effect.

¹² And his song 'The 10 Crack Commandments'.

MoM Commandment #1: Thou shalt convince the public to grant and allow you control over the money supply.

The first of the constraints has to do with being granted the power to control the money supply to begin with. Without the initial controlling mechanisms being handed over willingly (even if not from a fully informed basis), there is no power to discuss. History has shown that (at least in recent times) this is generally not very difficult to accomplish. People may be easily impressed by propaganda, titles, pomp and circumstance – such that they assume that a) others are ‘appropriately qualified’, b) those others have perfectly noble intentions, and c) the mechanisms through which these others operate are immune to corruption. The convincing need not be perfect or absolute – just *enough* to keep the average citizen from objecting too strongly.

MoM Commandment #2: Thou shalt not create so much new money that inflation reaches levels where the usefulness of the currency for the majority of the populace is nullified.

The second of the constraints has to do with supply and its impact on inflation. While the priests in our example can *in theory* create as much money as they want, if they create *too much* new money this would cause high levels of inflation which erode the usefulness of the money. The consequences would approach that of the scenario where a majority of the public had the power to create money, and so flooded the economy - creating hyperinflation. As such, people would ultimately reject the money and revert back to either barter systems or money systems based upon some different thing than the blessed leaves¹³. The priests would have ‘killed the goose that laid the golden egg’. The priests can create new money to generate *some* inflation, but if they push too far, the whole system risks collapse and being rejected by the public.

MoM Commandment # 3: Thou shalt only *gift* wealth (via new money creation) to yourselves and others via opaque and hidden mechanisms.

Simply put, the most attractive thing about being a ‘Master of Money’ is not just the ability to create the money, but to direct it where and to whom you want – whether that be yourself, or your friends and family. If the Master of Moneys decide they want to *gift* it to themselves, they may do so – but only if they honor this third commandment. Any gifting of wealth and value to themselves (or their cohorts) must be non-obvious and ideally steeped in complication – lest the public realize that a swindle is taking place.

“It is perhaps well enough that the people of the nation do not know or understand our banking and monetary system, for if they did I believe there would be a revolution before tomorrow morning.” – Congressman Binger quoting Henry Ford¹⁴

Power (and Wealth) of the Priests

Luckily for the Masters of Money, the facts that a) there are relatively few of them, and b) the power they wield is enormous, mean that there are many ways that they can enrich themselves while not violating the 3 MoM Commandments. Let’s explore a couple of simple examples to demonstrate this.

¹³ This is precisely what has happened in countries such as Zimbabwe and Venezuela where the 2nd MoM Commandment has been violated.

¹⁴ My last repetitive quote in this treatise.

Note though, that in these immediate examples, we are only taking as a given that Commandments 1 & 2 are honored. We are (for the sake of example) allowing the priests to violate Commandment #3 (making sure the process is not obvious). We are doing this (for now) because a basic understanding of ‘theft through inflation’ is critical, while the mechanisms for *hiding the fact that this is a theft* can (and will be) returned to later. It is worth noting though that besides ‘theft through inflation’ there are other powerful and insidious methods with which the priests may enrich themselves. These other methods will be addressed in the same future section where we address their compliance with the 3rd MoM Commandment.

Let’s begin our example with a simple assumption – that the priests have convinced the public that small levels of inflation (say, less than 3%) are acceptable - and maybe even needed for a healthy economy. Considering that this is literally taught in economics classes and textbooks today, it should be easy to accept this scenario as reasonable. We will continue our illustration of how the priests may massively enrich themselves through inflation by using a simple theoretical example of a country – called Leafistan.

TLDR/Summary of the remainder of this section

Even though many of us have been taught that small amounts of annual inflation (2-3%) are healthy, in reality they amount to a significant stealth-tax on the public that benefits a small elite. While in any one year the cost of the tax may seem slight to the average citizen, the benefit to each of the elite recipients is enormous. In just a few decades, this mechanism alone can cause most of the wealth of a society to become concentrated into the hands of the very few.

While I highly encourage readers to do their best to follow this section through (as I think it offers enormous value to see the numbers in action), if you are satisfied with this TLDR, you may now skip ahead to the next sub-section, ‘On MoM Commandment #3.’

Leafistan is a country of 100 million people, and has a priestly caste amongst this total (who blesses their leaves, turning them into money) of only 25,000 people. Every single Leafistan citizen (priests and non-priests alike) is allocated a personal net worth of 50,000 leaves at the founding of the country. This means that the total amount of money in the country is 5 trillion leaves.

At the end of the first year though, the priestly caste rewards themselves (for assuming the mantle of leadership) by awarding *each priest* an amount of leaves equal to 100 times the average citizen’s net worth of 50,000 leaves. $100 \times 50,000$ means that each priest is awarded 5,000,000 leaves. Since there are 25,000 priests the total amount of new leaves created is $5,000,000 \times 25,000 = 125$ billion leaves. This seems like an enormous amount, and it is on an individual basis. But when compared to the existing total pool of money in Leafistan (5 trillion leaves) it only translates into 2.5% of the whole. If we further assume that this newly introduced money supply immediately generates uniform inflation for all citizens, then we can measure individual wealth levels in terms of original leaves (now worth less due to the inflation).

Let’s see how this impacts the citizenry - non-priests and priests on an individual basis:

The Power of Money: A Case for Bitcoin

	Pre-Priestly Award	Post-Priestly Award	Total Wealth as Measured in Initial-Leaf-Allocation Purchasing Power	Cumulative Net Worth (measured in original leaves value)
Average Citizen	50,000 Leaves	Still has 50,000 leaves, BUT as the total supply of Leaves has been diluted by 2.5%, the 50,000 leaves today are only worth as much as $(1-2.5\%) \times 50,000 = 48,750$ leaves from before the award.	48,750 Leaves	48,750
Average Priest	50,000 Leaves	Still has 50,000 leaves, BUT as the total supply of Leaves has been diluted by 2.5%, the 50,000 leaves today are only worth as much as $(1-2.5\%) \times 50,000 = 48,750$ leaves from before the award. Awarded 5,000,000 leaves, but these too are worth only 97.5% of prior leaves' value, so $5,000,000 \times (1-2.5\%) = 4,875,000$ leaf value from before the award.	48,750 Leaves 4,875,000 Leaves	48,750 4,923,750

On an individual basis, the average citizen is only slightly worse off, while the average priest is massively wealthier. It's worth noting though that the inflation impacts both common citizen and priest alike - the new leaves that the priests gave themselves are worth less-per-leaf than before the inflation. The saving grace for the priests though is that they now have *far more* leaves than their loss due to inflationary impact. When we look at the example from a consolidated national level, we see something else quite remarkable.

	Pre-Priestly Award			Post-Priestly Award			
	# of Individuals	Per Individ. Leaves	Total Leaves	% of Total National Wealth (Leaves)	Per Individ. Leaves	Total Leaves	% of Total National Wealth (Leaves)
All Non-Priests	100 million MINUS 25,000 Priests = 99,975,000	50,000	4.99875 Trillion	99.975%	50,000	4.99875 Trillion	97.537%
All Priests	25000	50,000	1.25 Billion	0.025%	5,050,000	126.25 Billion	2.463%
	Total National Wealth		5.0 Trillion	100.000%		5.125 Trillion	100.000%

On a percentage-of-all-wealth basis, the priestly caste has just grown enormously – going from controlling only .025% of the wealth to nearly 2.5% of all wealth! What we are seeing is a *wealth transfer* from the non-priests to the priests. This may be thought of as a tax, which benefits some (the priests) and hurts others (non-priests). Unlike traditional taxes though, the populace was never approached by a single individual or organization, demanding that they ‘pay up’. Most of the citizenry may not even understand that there is a wealth transfer mechanism occurring at all. So long as they accept without question that annual inflation of ~2.5% is normal, they are bearing this burden to benefit the priests (who they may never come into contact with, or even know exist!)

To see the long-term impact of this wealth-transfer tax (from the ignorant masses to the priestly caste who are enriched by the system) we fast-forward by 50 years, using the exact same math. Let's assume there is zero population growth, and ‘inflation’ continues via the annual award of 5,000,000 leaves to each priest (representing less than 2.5% annual inflation).

The Power of Money: A Case for Bitcoin

After 50 years of Priestly Awards				
	# of Individuals	Per Indiv. Leaves	Total Leaves	% of Total National Wealth (Leaves)
All Non-Priests	100 million MINUS 25,000 Priests = 99,975,000	50,000	4.99875 Trillion	44.433%
All Priests	25,000	250,050,000	6.251 Trillion	55.567%
			11.3 Trillion	100.000%

Incredibly, the tiny priest caste, representing far less than 1% of the population and with inflation creeping at a meager 2.5% per year pace, now controls over half of all national wealth. For the astute observer of modern economics, this should be eerily reminiscent of both wealth distribution and dollar purchasing-power over recent decades.

On MoM Commandment #3

MoM Commandment # 3: Thou shalt only *gift* wealth (via new money creation) to yourselves and others via opaque and hidden mechanisms.

As mentioned in the preface to our example, the priests were obvious in giving themselves the new money – violating MoM Commandment #3. This would not stand over time as the public would object. They *may still* give themselves the money, but the way they transfer it to themselves must be obfuscated and roundabout so that the average citizen is unaware of what is truly happening.

We will shortly explore the mechanisms for doing this while conforming to the commandment, but the key takeaway at this stage is that the mere presence of such enabling mechanisms inevitably leads to corruption. With money comes power, and if there is a single lesson we can learn from human history it is that power corrupts. No individual born into the priestly caste may be perfectly insulated from the pressures of assuming very different values to those of the average non-priest. Sadly, these different values tend to (by virtue of time, separation, and human nature) be focused on selfish self-preservation and the maintenance of an ‘us versus them’ mentality. Non-priests, though useful at times, may become viewed as little more than cattle, convinced to enter the milking house (or abattoir) by keeping them in a state of confusion and alarm.

There is (and has been throughout the ages) a portion of the populace keenly aware of these types of nefarious and hidden monetary mechanisms - viewing them as contrary to the higher aspirations of humanity. In today’s day and age, some of these people are at times referred to as ‘gold bugs’ – as gold has served the role throughout the ages as money of a fixed supply, and thus avoids all the negative consequences of money-supply-control falling into fallible human hands. But gold, while for periods in history succeeded in establishing itself *as* money, has ultimately failed to defend this position. There are several reasons for this – some due to the cunning and improvisation of those who seek to control the money supply themselves, some due to its inherent limitations. Nevertheless, to continue in our quest of understanding ‘where we are’ we now explore this incredible substance called gold – for it offers an enormity of lessons and insight.

Chapter 4: From Gold to Gold-Backed Currencies

Gold as money

Money has in some way always revolved around gold as its ‘spiritual’ anchor point.¹⁵ There are many good reasons for this, but let’s start with the simplest and most basic one, even before focusing on its moneyness. Throughout history a particular species of primate, us humans, have been aesthetically drawn to gold. Throughout the ages both we and our ancestors have adorned ourselves with it and used it for religious, social and political ceremony. Maybe there’s something magical to it that we are drawn to. Maybe it’s just the look and feel of it that triggers the right receptors in our brain for a ‘pleasure’ sensation. Whatever the case may be, there’s no denying that people generally have a positive visceral response to gold.

While people have sought after gold for the above reasons, the value it offers by using it as ‘money’ is arguably orders of magnitude higher than all those other aspects. Of course this is dependent on how well gold satisfies our ‘moneyness’ criteria, so let’s quickly run through them.

1) Store of value

To be a good store of value something can be neither perishable nor of unrestricted supply. Gold satisfies these conditions extremely well. It doesn’t expire, rust, corrode, wither or fade. You can go to museums and marvel at the very same gold upon which Pharaohs gazed thousands of years ago – and it’s in the same condition. If you heat it to high enough temperatures you can melt it (and purify it if it’s been combined with another metal), and once allowed to cool it re-solidifies. This allows it to be shaped it into all sorts of useful shapes and designs.

Gold is also very rare. There just *isn’t that much* on Earth. Some people have asserted (and they’re probably correct) that all the gold in the world would fit into a cube just 20 meters long on each side. Considering how large our planet is, that’s not terribly much.

It’s true that we ‘discover’ more gold each year via mining and exploration, but even ignoring the fact that much of gold is ‘not in circulation’¹⁶ all the gold found only accounts for an annual increase of less than 2-3%. When you couple this increase in supply with the fact that it’s only achieved through a lot of hard work and resource expenditure, we can more-or-less treat gold as a fixed supply asset.

2) Unit of Account

Gold works extremely well here too. It can be easily purified and so kept perfectly uniform. It’s also terrifically divisible. Measuring other things in terms of units of gold (whether than be in grams or micrograms) is very easy to do. You can have gold in the form of thick bars, or shaved as thin as 1 molecule width gold-leaf – it still maintains its chemical and physical properties and characteristics.

3) Medium of Exchange

Gold excels here. Because of its chemical properties, it can be shaped into basically any form and carried around with minimal expense. It’s sufficiently compact such that for practical uses, it can be

¹⁵ There is quite literally, something *otherworldly* about this stuff that is born out of astronomical collisions and explosions. Modern science isn’t exactly sure how gold molecules are formed, but current consensus is that they’re created in either supernovas or neutron star collisions.

¹⁶ A topic we leave alone here, as it doesn’t materially add to this exposition.

held or accessed by a single person and accompany one on his or her travels – whether that be to the corner shop or to the other side of the world. Depending on the purity, a single gold coin could range in value from just enough to buy a loaf of bread, to enough to buy 1,000 loaves.

It's also relatively easy to tell if an item of gold is genuine as well as the level of its purity. Even without modern scientific measuring equipment, touchstones have been used for over 5,000 years. This is especially useful when you're in an environment where you might otherwise not trust the person with whom you are transacting.

A Quick Side Note On Silver

Many of the same traits that gold has are held by silver. The key functional difference though between gold and silver (relative to their usefulness as money) lies in their scarcity¹⁷. There's a lot more silver in the world than gold. As such, its value per ounce is much lower than gold. Historically an ounce of gold has been worth 30-40 times more than an ounce of silver, though these days that ratio is closer to 70 times. The practical implications of this are significant.

For instance, if you wake up one day and realize that your country has turned into a dictatorship and decide to flee, you will probably want to take as much of your wealth with you as you can carry. Because gold is denser on a value/weight ratio, you can carry a lot more wealth in gold than silver. Carrying 1 gold bar out of the country weighing 1 kg is a lot easier than carrying 70 kg of silver bars – the potential equivalent in value.

However, if you want to go to the local shop and buy some groceries, you are probably better off bringing a 1-ounce silver coin rather than a 1-ounce gold coin. One ounce of silver is currently worth about \$16 – sufficient to get milk, bread and some other staples. But a one-ounce gold coin is worth close to \$1300 – far in excess of what you need. Do you really expect the cashier at the grocery store to 'make change' on your gold coin? And with what? Dozens of pieces of silver? In terms of day-to-day smaller denomination transactions, silver is generally superior to gold.

There is definitely a place for silver in the consideration of investment allocations – and silver is indeed a great form of money. That being said though, for the purposes of this paper and for the sake of expediency we will largely focus on gold.

Over the millennia, many different things have been used as money. Gold has (generally) remained at the forefront of the very few long-term survivors. This is not only because of how well gold serves as money, but how *poorly* everything else that was ever used as money performed in the long-run. When it comes to meeting the criteria for 'sound money', there isn't much margin for error. History has shown time and again that if all criteria of 'moneyness' are not met, then that thing being used as money or currency will ultimately collapse – usually violently.

¹⁷ There are other features silver has which gold does not – for instance its use in many industrial processes. We acknowledge this as a fact, but pursue it no further as it doesn't materially add to this exposition.

The Birth of Banks and Gold-Backed Currencies

While gold has historically been the best form of money, it's not without limitations. Though the narrative I'm about to describe is more apocryphal than historical fact, using the sequencing of events as I do is useful nonetheless. With it, I hope to demonstrate key features of gold, as well as how it is (or was) related to banking and gold-backed currencies.

In 'the old days' when everybody accepted that gold was money, money was gold, and nothing else would do – there was still one main problem that remained and needed solving – security.

With gold as the only form of money, the question of where to securely store your gold became a major issue. You could keep your gold in or around your home, but unless you also invested a significant amount of resources in things like safes and/or armed security, your gold holdings would be at risk to thieves and robbers. This cost, while prohibitive for most individuals, could be widely afforded if people pooled their resources and kept their gold in a single centralized (and adequately protected) place. This is where banks were born.

The basic premise of a bank is simple: People keep their wealth (gold) in the bank, and share in the costs of providing adequate security – whether that be in the form of safes, armed guards or otherwise. By using a centralized location, security could be optimized while keeping the costs of maintaining that security low on a per-account basis.

With the bank set up, participants realized quickly that there were basically two ways to operate, either with or without *currency*.

Before exploring these options, let's first define this term which we are introducing – currency.

A currency is a medium of exchange that is used to represent money by *mimicking and tracking* the underlying money's store-of-value and unit-of-account characteristics.

Just as money is defined as something that can be symbolically *represented* by something else, currency is that *thing* which does the symbolic representation. Currencies do not innately pass any of the tests that define something as money. There is nothing *inherent* in the traits of, for instance, a piece of green paper that keeps its supply constrained or the logic of its divisibility sound. Despite this lack of innate 'moneyness', active management of its supply, distribution and account measurement features (so that it *tracks* underlying money) can enable it to be used as an effective money representative.

Banking Option 1 of 2: No currency - keep the bank strictly gold-in, gold-out (GIGO).

The advantage of a GIGO bank is simplicity. If you have gold you want to be kept safe, you deposit it at the bank. If you want to use your gold, you go to the bank, withdraw it, and then spend it where and how you like.

The problem with a simple GIGO bank though is one of cost and efficiency. Having to go to-and-from the bank every time you want to make a transaction can be very cumbersome – especially if you are transacting in large quantities.

For instance, if you wanted to buy a large property for 1,000 ounces of gold, you would need to go to the bank, withdraw the gold, and then arrange for security to bring it to the property seller. Once you paid the property seller, *he* would need to arrange for security, and bring it *back* to the bank to deposit it. This transaction would be made a whole lot simpler (and less costly) if the gold never left the bank, but rather the owner of record was simply changed from the buyer to the seller of the

property. This is made possible with gold-backed-currencies, and they form the backbone of the second option of how banks may operate.

Banking Option 2 of 2: Have the bank issue a gold-backed *currency*

Rather than the GIGO approach, the bank instead issues all depositors tokens which represent their holdings. These could be tin or copper coins, or elaborately decorated pieces of paper. Regardless of the form it takes, the tokens now represent a gold-backed currency. This is because the bank agrees to three things when they issue them:

- 1) Each token/unit-of-currency represents one unit of gold being held at the bank.
- 2) In exchange for units of tokens, the bank will give the related units of gold to whomever submits them.
- 3) The tokens are negotiable – meaning that they are transferable. Regardless of who submits the token for a gold withdrawal, the bank will honor it.

This makes transactions much simpler now (with one glaring complication we will address momentarily). Rather than having to transport 1,000 ounces of gold to purchase the property of our last example, you could simply hand over a Banknote with a stated value of 1,000 gold ounces to the property seller. By doing so, you are forfeiting your ability to claim that gold from the bank, and instead giving that right to him.

If he wants to receive the actual physical gold, all he needs to do is take that note to the bank and withdraw it. Of course, he may find it easier to just leave his gold in the bank and hold on to the note which he can use for further trade.

The introduction of currency introduces yet another complication, and that is the issue of counterfeiting.

Counterfeiting

It's relatively easy to identify if a piece of gold is in fact genuine and not counterfeit, but not so easy when it comes to other materials. The authenticity of paper currency, no matter how elaborate the design, is ultimately vulnerable to a skilled hand. Furthermore, counterfeit metallic coins may be fairly easily cast. This poses a significant risk for our bank that uses gold-backed currency.

A successful counterfeiter can show up at the bank and withdraw gold that does not belong to him. This means that the holders of genuine (not counterfeit) currency now have a pool of gold backing it which is less than the nominal amount they hold. They may think they have a certain amount of physical gold backing their notes, but if a counterfeiter has withdrawn gold using counterfeit notes, they may have far less.

Fooling the bank directly is actually not even required – simply fooling another person in a transaction will do the job. The counterfeiter may simply use his fake currency to buy goods and services from honest tradespeople. When the tradespeople go to redeem their currency at the bank, they may be told that the notes are fake and will not be honored by the bank. They will then realize that they have given away their wares for worthless counterfeit notes.

Even the *prospect* of there being counterfeit currency in circulation can affect purchasing power. If for instance there was a rumour that 10% of all notes in circulation were counterfeit, then tradespeople might only value even a legitimate unit of currency at 90% of its face value in gold if not less. These are the stirrings of a potentially deadly (for the currency) form of inflation.

As counterfeiting presented an existential crisis to banks that wished to use a gold-backed currency, drastic measures were called for. In addition to trying to make the currency as difficult as possible to replicate, an additional deterrent was added – the threat of death. Throughout much of history, the penalty for counterfeiting currency was death. This of course opened the door to link currencies with government – as the banks needed government to enforce the counterfeiting prohibitions (and punish violators). Government involvement, as we will later see, would become increasingly problematic.

Nevertheless, with rule of law (by and large) preventing counterfeiters, the business of banking progressed fairly smoothly. Bankers were seen as little more than custodians, and people were happy with that arrangement. Currencies (or Bank Notes) were used *as* money, and when actual physical gold was demanded by the currency holder, the banker would simply go to the vault and swap the currency for the gold.

As a consequence of this, the public began to *forget that the currency had no innate value*, but rather only had value derived from being linked to money. This loss of awareness on the part of the public opened the door for direct-linkage between money and currency to come under attack. The breaking of this link would give power and privilege to the few at the expense of the many.

Up until this point bankers (custodians of the gold) had to be very careful to not issue paper currency in amounts that differed from the physical gold (money) deposits on hand. As they had not yet established compliance with the 1st MoM Commandment, any discovery by the public that they were controlling the money supply (generally to increase it by printing currency) could be expected to be treated no differently than common counterfeiting.

What the bankers needed first and foremost was a mechanism which would not only see to it that the power to create money¹⁸ was given to them to manage, but that it was done under the guise of being for the benefit of the general public. Without the public believing there was ‘something in it for them’ to cede this power to bankers, no lasting compliance with the first MoM commandment could be expected. The bankers found their answer in the form of what is now called Fractional Reserve Banking – *and is intimately tied to lending and loan creation*.¹⁹

Chapter 5: Questionable Currency

Introduction to Fractional Reserve

In a proper and untarnished form (that is to say, a purely theoretical functioning), fractional reserve banking works quite admirably. Its danger lies in how easily seemingly minor changes to its honest operation can corrupt the process. To demonstrate this, we will explore the pure forms (theoretical

¹⁸ Actually, it is currency they will be printing, not money. I apologize now and in advance for what I expect will be a continued ‘mixing up’ of terminology. I do this for the sake of ‘flow’ and humbly ask understanding that sometimes, in order to clearly communicate complex topics, some liberties must be taken in relying upon useful but technically incorrect terminology. I hope that by the time the reader understands the core issues, he or she will be able to re-read the document and point to the instances where this occurs without malice.

¹⁹ It is a curious fact that many religious scriptures have stern warnings and prohibitions surrounding the act of borrowing/lending money, often even discussing remedies for the imbalances that inexorably arise (e.g., debt jubilees). Perhaps this is because the very nature of entering into a loan introduces seeds of enslavement, even if only in the seemingly mild and innocuous mindset that one party (the borrower) is now beneath another (the lender). This dynamic hides in plain sight in our language anytime we refer to someone as being *indebted* to another.

side) of fractional reserve lending and banking, and then demonstrate how the process can be (and has been) corrupted so heinously. The problem with all 'isms'²⁰ is that the benefits which they provide in theory (and upon which their idea is 'sold' to the public) belie the true negative impacts they confer on those who adopt the system. This is the vast chasm between theory and practice which we as a species would on the whole benefit greatly from appreciating.

TLDR/Summary of the remainder of this section

Bankers discovered that by lending out depositor's gold, which they would do by 'creating more currency', they could pay depositors a portion of the interest earned and keep the rest for themselves. If the loans performed well, the bankers stood to gain more. If the loans fared poorly, the depositor's assumed the losses. It was a classic 'heads I win, tails you lose' coin toss. Once this power was attained by the bankers, a plethora of ways to enrich themselves was now available – ranging from assuming huge volumes of risky loans, to extending additional loans to failing enterprises, to engaging in duplicitous self-dealing transactions.

While I (again) highly encourage readers to do their best to follow through with the remainder of this section, if you are satisfied with this TLDR, you may now skip ahead to the next sub-section, 'Physical Gold As Backing'.

Returning to our bank example: what the custodians at the bank noticed was that on any given day, the vast majority of the gold in the vault was never touched. Of course the *exact* amount of gold the bank held changed day by day – but on a percentage basis the swings were fairly low. For instance, the average amount of daily gold withdrawals might be between 3-5% of gold held. At the same time, the average amount of daily gold *deposits* might *also* be 3-5%. With deposits netting against withdrawals, this meant that on any given normal day, *on average*, the gold stores in the vaults never even needed to be touched. This meant that *if* the bankers were to print more notes than there was gold in the bank vaults, from an operational perspective, it wouldn't cause any immediate problems.

Of course if people found out that they had printed more notes which had been given away without consent (thereby diluting existing noteholders' claims on the gold), they would be considered counterfeiters (as explained earlier). But from an operational perspective, having more notes than gold reserves wouldn't prevent the system (of gold deposits and withdrawals) from running smoothly on a day-to-day basis – at least in all but the most extreme circumstances. All that was needed now was a demonstration that giving bankers the power to create new notes would benefit the public – i.e., depositors. This lure was the promise of interest on deposits, and was to be achieved through lending.

Up until this point in our scenario, depositors earned no interest on their deposits. In fact, to cover costs of security, the average depositor might even be expected to *pay* a small amount each year for the privilege of having their gold kept safe in the bank's vault. But if the depositors would only allow the bankers to *lend* some of their gold out, they could earn interest! Unbeknownst to most

²⁰ Communism, capitalism, socialism, idealism, and in this case, monetarism.

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depositors though was that by allowing the bankers to do this they were unwittingly granting them the power to ‘create money’ and thus satisfy the 1st MoM Commandment.

To follow this example, you simply have to accept that a bank’s balance sheet is represented by Assets, Liabilities, and Equity. Assets are the things ‘of value’ that a bank holds in its vaults. Liabilities are claims against those assets that exist. Equity is the difference between Assets and Liabilities. If the total Assets exceed the total Liabilities, then the Equity is said to be positive. If Liabilities exceed Assets then there is negative equity. The equation which must always remain true is: $A = L + E$, or $\text{Assets} = \text{Liabilities} + \text{Equity}$.

Let’s imagine that the bankers find themselves as custodians of 100 ounces of gold and so issue 100 1-ounce ‘notes’ to the depositors. The bank’s balance sheet at this point looks like this:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)	=	100 ounce-notes (paper obligations to depositors)	+	Nothing
Value in Gold Ounces	100	=	100		

Within a period of time, they are approached by ten individuals, all looking to borrow the equivalent of 10 ounces of gold each. Each of the prospective borrowers offers collateral initially valued at 10 ounces of gold (also each). In exchange for the promise to repay the 10 ounces plus 10% interest in physical gold (an extra 1 ounce each) after 1 year, the bank ‘prints’ 100 ounces worth of new notes and gives them to the borrowers. Now the bank’s balance sheet looks like this, with the new ‘Loans’ treated as an asset – it is, after all, an IOU from the borrower:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		Nothing
	Loans (totalling 100 ounces worth) with Collateral provided		100 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	$100 + 100 =$ 200	=	$100 + 100 =$ 200		

If all the borrowers pay back the bank-notes at the end of one year (with interest), then the collateral is released to them. As the banknotes are no longer ‘in circulation’, they are removed as a liability. There are also now an extra 10 ounces of gold that ‘may be distributed’. Let’s assume that the bankers keep 2 ounces for themselves and give the other 8 to depositors as interest. These value transfers are done through printing new notes. The balance sheet now looks like this:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		108 ounce-notes (paper obligations to depositors)		0
	10 ounces of Gold (physical, earned as interest)		2 ounce-notes (paper obligations to bankers)		
Value in Gold Ounces	110	=	110	+	0

The depositors can be said to have earned 8% interest on their savings, and the bankers have earned the currency equivalent of two gold pieces while not using any of their own capital, but rather providing the service of managing the whole process.

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But what if rather than everyone paying back their loans with interest, some of the debts ‘go bad’? Well, in this case, the presence of interest and collateral mitigates the losses. Let’s assume that 2 of the 10 borrowers *don’t* pay back their loans at maturity – not at all. In this case, the bank seizes the collateral they have posted. Let’s further assume that the value of the collateral they posted (which was initially worth 10 ounces of gold each, or 20 ounces total) has lost value and is now only worth 18 ounces total. The bank’s balance sheet now looks like this:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		6 ounces of equity
	8 ounces of Gold (physical, earned as interest from those that paid)		20 ounce-notes (paper obligations lent to borrowers who have not returned them)		
	Collateral seized, now worth 18 ounces				
Value in Gold Ounces	126	=	120	+	6

The bank still has a gain, or ‘equity’ of 6 ounces of gold. They may now sell the collateral for actual gold, and distribute the ‘equity’ to the depositors as interest and themselves as a management fee. After the collateral sale and distribution of equity, the balance sheet looks like this:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		104 ounce-notes (paper obligations to depositors - initial deposit plus 4 ounce notes paid as interest)		0
	8 ounces of Gold (physical, earned as interest from those that paid)		20 ounce-notes (paper obligations lent to borrowers who have not returned them)		
	18 ounces of Gold (from collateral sale)		2 ounce-notes (paper obligations to bankers)		
Value in Gold Ounces	126	=	126	+	0

The bankers have still paid themselves 2 ounces of gold, and the depositors have still earned positive interest, although rather than 8% interest they only earned 4% interest.

The takeaway from the above example is this:

So long as losses on ‘bad loans’ remains relatively low, the presence of collateral and interest still allows for interest to be paid to the depositors.

This is the carrot – the mechanism whereby depositors are motivated to allow the bankers to lend out their money – which by virtue of the fact that they do so by printing more currency, is really giving the bankers the power to ‘bless new leaves’ and increase the money supply. While the bankers are not yet ‘gifting money’ to themselves, they have the ability to ‘take a cut’ of the interest earned on the bank’s loans.

[Dangers of Fractional Reserve – Unaligned Incentives Part 1](#)

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Even before more advanced forms of bankers ‘gifting new money to themselves’ are introduced, we can see that there is an inherent misalignment of interests in the current lending scenario²¹.

Since the bankers earn money for themselves by taking a portion of the interest earned on all loans, it is in their interest to try and lend as much money out as possible. At the same time, if the loans ‘go bad’, the losses are borne not by the bankers, but by the depositors. Let’s look at a couple of scenarios to demonstrate this.

Assume again that the bankers find themselves as custodians of 100 ounces of gold and so issue 100 1-ounce ‘notes’ to the depositors. The bank’s balance sheet looks like this:

	Assets	=	Liabilities	+	Equity
Items	100 ounces of Gold (physical)	=	100 ounce-notes (paper obligations to depositors)	+	Nothing
Value in Gold Ounces	100	=	100		

The bankers understand the mechanisms for how *they* will get paid... earning a portion of the interest paid on the loans. The more interest earned on loans, the more they earn. As such, they try to lend as much as they can. Let’s assume that they promise their depositors a rate of return on savings of 8%. Like in the previous instance, they begin by lending out 100 ounces of gold – again taking collateral for the loans. The balance sheet looks like this:

	Assets	=	Liabilities	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		Nothing
	Loans (totalling 100 ounces worth) with Collateral provided		100 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	100 + 100 =		100 + 100 =		
	200	=	200		

But now the bankers decide to lend more gold (notes) out to more speculative borrowers. On the one hand, these new borrowers do not have collateral to post, and so are riskier loans. If the loans go bad, the bank will not be able to seize collateral to offset the losses. On the other hand, the banks can charge a much higher rate of interest to these more desperate borrowers. Let’s assume the bank lends out another 500 ounces of gold notes to these riskier borrowers (without collateral) at 20% interest. The balance sheet now looks like this:

²¹ As human beings, we all have both higher *and* lower aspects to our nature. It’s vitally important that we provide ourselves with systems and structures that are conducive to the expression of our more noble aspirations, or at the very least, don’t provide a breeding ground for our baser impulses. It’s nothing short of extraordinary what can be accomplished in systems when the interests of all participants are aligned. Conversely, when interests *are not* aligned, it is generally only a matter of time before the system starts to express imbalance – whether that be an initial wobble or a full-on collapse.

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	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		Nothing
	Loans (totalling 100 ounces worth) with Collateral provided		100 ounce-notes (paper obligations to borrowers)		
	Loans (totalling 500 ounces worth) with No Collateral		500 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	100 + 100 + 500 = 700	=	100 + 100 + 500 = 700		

Let's suppose now that at the end of one year, all of the collateralized loans pay back principal (the notes lent out) and interest (10 ounces of physical gold). The interim balance sheet would be:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		10 ounces
	10 ounces of Gold (physical)				
	Loans (totalling 500 ounces worth) with No Collateral		500 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	100 + 10 + 500 = 610	=	100 + 500 = 600	+	10

The bankers look to be in good shape! They can give 8 ounces of the equity to depositors (the promised 8% interest) and keep 2 ounces for themselves. But what of the remaining riskier loans?

Let's assume that 10% of the loans 'go bad'. This means that of the 500 ounces lent out, 50 ounces worth of loans are now worth zero (as there is no collateral behind them). But 10% of the loans going bad means that 90% of the loans repaid the principal and interest! That would be 450 ounces of gold notes returned as principal, and 20% of this amount (the rate of interest on these riskier loans), or 90 ounces of actual physical gold, would be repaid as interest. This means that the bank's balance sheet looks this:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		50 ounces
	10 ounces of Gold (physical)				
	Loans for 50 ounces worth ZERO		50 ounce-notes still outstanding		
	Loans for 450 ounces		450 ounce-notes still outstanding		
	90 ounces of Gold (physical)				
Value in Gold Ounces	100 + 10 + 0 + 90 = 200	=	100 + 50 = 150	+	50

Even when writing down the bad-loans to a zero-value, there are now 50-ounces worth of equity value which may be distributed. But remember, the banks only promised the depositors an 8% return on their money, so they only need to give away 8 ounces... meaning they can keep 42 ounces of gold for themselves! Quite a windfall!

But what happens if *more* of the loans in the above scenario 'go bad'? What happens to the bank, bankers, and depositors then? Let's explore that now.

Assume that the banks have made the same types of loans as above – the balance sheet at the beginning of the year (again) looks like this:

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	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		Nothing
	Loans (totalling 100 ounces worth) with Collateral provided		100 ounce-notes (paper obligations to borrowers)		
	Loans (totalling 500 ounces worth) with No Collateral		500 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	100 + 100 + 500 = 700	=	100 + 100 + 500 = 700		

Let's now assume that all of the collateralized loans again are paid off with no losses. In this case, at the end of one year (and before taking into account the impact of the uncollateralized loans) the balance sheet is again as follows:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		10 ounces
	10 ounces of Gold (physical)				
	Loans (totalling 500 ounces worth) with No Collateral		500 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	100 + 10 + 500 = 610	=	100 + 500 = 600	+	10

But different from the previous example, let's assume that instead of 10% default rates on the uncollateralized loans, a full 50% fail to repay. In such a case, 250 ounces worth of loans are now worth zero, while the other 250 are paid off in addition to interest of 20% on them (20% of 250 ounces is 50 ounces). The new balance sheet will look like this:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		-150 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces worth ZERO		250 ounce-notes still outstanding		
	Loans for 250 ounces		250 ounce-notes still outstanding		
	50 ounces of Gold (physical)				
Value in Gold Ounces	100 + 10 + 0 + 50 = 200	=	100 + 250 = 350	+	-150

Let's finally assume that the bankers *still* satisfy their promise of 8% interest to their depositors – through issuing new notes. Let's also say that they don't pay themselves anything as there were no profits. The balance sheet looks like this now:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		108 ounce-notes (paper obligations to depositors)		-158 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces worth ZERO		250 ounce-notes still outstanding		
	Loans for 250 ounces		250 ounce-notes still outstanding		
	50 ounces of Gold (physical)				
Value in Gold Ounces	100 + 10 + 0 + 50 = 200	=	108 + 250 = 358	+	-158

Note that equity is now negative. It has to be negative as equity is the 'plug' to satisfy our equation of $\text{Asset} = \text{Liabilities} + \text{Equity}$. But what does this mean?

From the banker's perspective, they have not earned any money (from interest), but they also haven't lost any money. They were, after all, lending OPM (other people's money) and so had no 'skin in the game.'

From the depositors' perspective though, things are quite different. There are now a total of 358 claims on gold ounces in the bank, but only a total of 200 ounces available. Said another way, each depositor's note claim has lost 45% of its value... although each depositor may not even know it yet! After all, we have already established that on any given day no net physical gold enters or leaves the bank, so for as long as the average depositor is kept in the dark about the bank's financial position, nothing need happen.

Of course, it's only a matter of time before knowledge of the bank's negative equity (insolvency) filters its way into the public's awareness. When that happens, a bank run is likely – depositors will rush to withdraw their gold in exchange for their notes. Of course, if the bank honors its word of offering up 1 ounce of physical gold in exchange for each 1-ounce note, then only the first 200 noteholders will receive their gold (as that's all there is). Anyone later to the game will get zero.

The purpose of these examples is to demonstrate how it can be in the interests of bankers to make as many loans as possible, as they are in a 'heads-I-win, tails-you-lose' situation. If the many loans perform, then the bankers get a windfall from the interest profits. If the loans do not perform, then losses are borne by the depositors.

It can rightfully be said that any 'banking crisis' you may have heard of boils down to the same type of scenario: namely, too many bad loans were made, which benefitted the bankers (for a time, while the loans were performing and interest was earned by them), but ultimately put the depositors in a capital deficient position. In the days when banking systems were on the gold standard (like in this scenario, the 'notes' were backed by gold deliverable upon demand) a loss in confidence of a particular banking system's solvency could cause 'slow motion bank runs'. Indeed, depositors would submit their notes for gold, and ship the gold off to another safer location – often internationally. In the days of J. Pierpont Morgan there were many such 'banking crises' where astute international investors would literally ship tons of gold out of what they perceived to be failing banking systems.²²

The good news about the gold standard though is that this transfer of physical gold out by nervous investors (who have lost confidence in a bank's solvency) is ultimately *some* form of a check to systemic imbalances. Things can only get so bad before astute investors withdraw their gold and force an accounting for the true state of a bank's finances. As such, bankers will generally work to keep loans from becoming too risky, lest they lose the confidence of depositors and suffer gold withdrawals. We will return to this point, but before we do, it is worth exploring a permutation to the above scenario – one which shows how bankers can not only keep an insolvent bank functioning, but further enrich themselves at the same time (and at the expense of depositors). We call it unaligned incentives: part 2, but could be called 'how to rob a bank in broad daylight.'

[Dangers of Fractional Reserve – Unaligned Incentives Part 2](#)

In the scenario above (where the bankers made risky loans that failed) we assumed that at the end of the first year, they (and the borrowers) *admitted* that the loans had failed. If however, those

²² It's worth noting that in recent years, many international governments have requested a return of their gold being held in other countries – with varying degree of compliance from the custodians.

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involved do *not* admit it, the bankers can continue to pay themselves handsomely. We will demonstrate this again with an extension of the example - but know that what we are describing is akin to what many have called (particularly in Japan) “Zombie Banks” – that is, banks which *should be* considered insolvent and losses taken, but for various reasons (the enrichment of bankers being one of them, the ongoing functioning of failing borrowers being another) are allowed to keep operating – like the walking dead²³.

Imagine again that we are at the end of the first year of the risky loans, and 50% of them have again not paid back their principal or interest. Prior to addressing the riskier (and partially non-performing) loans the balance sheet looks like this:

	Assets	=	Liabilities	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		10 ounces
	10 ounces of Gold (physical)				
	Loans (totalling 500 ounces worth) with No Collateral		500 ounce-notes (paper obligations to borrowers)		
Value in Gold Ounces	100 + 10 + 500 = 610	=	100 + 500 = 600	+	10

If the bankers were brutally honest, they would book a loss on half those risky loans, and the balance sheet would be (again, same as in the previous example):

	Assets	=	Liabilities	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		-150 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces worth ZERO		250 ounce-notes still outstanding		
	Loans for 250 ounces		250 ounce notes still outstanding		
	50 ounces of Gold (physical)				
Value in Gold Ounces	100 + 10 + 0 + 50 = 200	=	100 + 250 = 350	+	-150

However, there is an alternative. Rather than admit that those 250 ounces worth of loans have gone bad, they could instead *extend more credit to those bad borrowers*. They could lend those borrowers enough additional money to (nominally) pay the interest that was due, and extend the original loan for one more year. This is where things begin to get a bit tricky, so we’ll break it into fewer steps.

For starters, the collateralized loans have been paid off (plus 10 ounces of physical gold as interest), as well as half of the riskier uncollateralized loans (250 ounces, plus 50 ounces of gold as interest). Besides that, the remaining bad 250 ounces of loans are kept on the books valued at 250, with maturity extended by one year. As principal has not been paid back, the extra 250 worth of gold notes remains outstanding as well.

²³ What typically happens is that these banks are ‘bailed out by the government’, aka, the public taxpayer. Although it may feel like this is a victory, all that has happened is that the public (like depositors of times past) has shouldered the losses, while those who enriched themselves throughout the process keep their gains.

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	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		60 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces 'worth' 250		250 ounce-notes still outstanding		
	Loans for 250 ounces		250 ounce-notes still outstanding		
	50 ounces of Gold (physical)				
Value in Gold Ounces	100 + 10 + 250 + 50=		100 + 250		
	410	=	350	+	60

But in order to not consider the existing loans for 250 in default, the bank must be paid interest in the form of 50 ounces of physical gold. To 'help them pay the interest', the bank lends the same borrowers another 50 ounces worth of gold notes. As such:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		60 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces 'worth' 250		300 ounce-notes still outstanding		
	Loans for 250 ounces		250 ounce-notes still outstanding		
	50 ounces of Gold (physical)				
	Loans for another 50 ounces				
Value in Gold Ounces	100 + 10 + 250 + 50 + 50		100 + 300		
	460	=	400	+	60

But the borrowers must deliver *physical* gold as interest – and 50 ounces worth. Not to worry though, as they take their new 50 ounces of notes and exchange them for physical gold.

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		60 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces 'worth' 250		250 ounce-notes still outstanding (50 tendered for physical gold)		
	Loans for 250 ounces		250 ounce-notes still outstanding		
	0 ounces of Gold (physical)(50 withdrawn)				
	Loans for another 50 ounces				
Value in Gold Ounces	100 + 10 + 250 + 0 + 50		100 + 250		
	410	=	350	+	60

Now, as the borrowers are holding onto 50 ounces of physical gold (which they just withdrew) they can turn around and 'pay that gold back' to the bank as interest – leaving the balance sheet as follows:

	Assets	=	Liabilites	+	Equity
Items	100 ounces of Gold (physical)		100 ounce-notes (paper obligations to depositors)		110 ounces
	10 ounces of Gold (physical)				
	Loans for 250 ounces 'worth' 250		250 ounce-notes still outstanding (50 tendered for physical gold)		
	Loans for 250 ounces		250 ounce-notes still outstanding		
	50 ounces of Gold (physical)(redeposited as interest)				
	Loans for another 50 ounces				
Value in Gold Ounces	100 + 10 + 250 + 50 + 50		100 + 250		
	460	=	350	+	110

As if by magic, the bank is once again 'solvent' - so much so that in fact the bankers can not only distribute the 8% interest to depositors, but now have 102 ounces (110 – 8) left to distribute to themselves as profit – more than in any other situation we've examined thus far! When the bankers distribute this additional equity to themselves, they are effectively paying themselves a bonus, at the expense of depositors who will have *that much less* value left for them when a true reckoning/accounting occurs. As long as the bankers are not asked to *give back* this bonus when the losses are ultimately recognized (perhaps years later), they will have made out quite profitably! By the time the 'reckoning' does occur, the bankers have accumulated enormous wealth (which they have likely now transferred into *physical gold*, making it immune from bank write-downs) leaving all depositors to suffer in greater impoverishment.

Physical Gold As Backing – The Great Equalizer

Given the examples above, demonstrating how fractional-reserve-lending creates incentives (for bankers to not only recklessly gamble with depositors' value but potentially falsify loan values), it might seem like the whole concept is doomed from the get-go. However, as we have already alluded to, it is the very prospect of a disorderly unwind – a bank run – that holds the prospect of preventing things from 'getting this bad'.

While many depositors are ignorant as to the workings of the banks, *some are aware of the process, and effectively serve as restraints which* can 'keep the bankers honest'. Let's spend a moment on these more aware depositors (we'll call them watchdogs) and see how they can behave to avoid getting taken for a ride by unscrupulous bankers.

First and foremost, the watchdogs will closely examine and scrutinize the actions of the bankers – especially with regard to the loans they make. This is the birth of bank examiners. If at any time they feel that the bankers are behaving recklessly or dishonestly (for instance, by making too many risky loans, or throwing good money after bad by not recognizing bad loans and instead extending more credit) they can act. They can (for simple example) take their gold out of the bank (by tendering their bank notes in exchange).

If enough of the watchdogs do this (and advertise the fact), a bank run may begin – effectively ending the bank (and the bankers' otherwise modestly profitable position). All the note holders will attempt to redeem their notes for gold, but as there will not be enough gold to satisfy them a bank failure occurs - potentially with social or legal liability for bankers who are viewed as responsible²⁴. It is the threat of these actions that keep the bankers in line – but importantly, it is dependent on depositors being able to *exchange their notes for gold on demand*. This is a critical point and cannot be overemphasized, as without this mechanism, there is little to keep the bankers reigned in from behaving recklessly and in their own self-interests. This is not to say that bad loans will be prevented from being made, nor that falsification of loan values will be entirely avoided – but there is at least a mechanism to keep these things from getting enormously imbalanced.

While we will return to the point shortly, it is worth noting here that as of 1971, when American President Richard Nixon 'abandoned the gold standard', the American banking system (and effectively most banking systems of the developed world) lost this mechanism. This feature, whose mere presence served to at least threaten to 'keep bankers honest' was removed. Is it any wonder

²⁴ In the 21st century, there are strikingly few countries where bankers have been held accountable for criminal behavior. Unfortunately, this system where bankers often feel they have blanket immunity to criminal prosecution has tended to breed more illicit behavior.

then that it would take only a handful of decades before the entire system would spin out of control?

Dangers of Fractional Reserve – Unaligned Incentives Part 3

Up until this point, we have explored ‘banking gone wrong’ from the simple perspective of loans being made without proper regard for their risk, and bad loans being artificially ‘propped up’ with additional lending. The manner in which the bankers transfer value to themselves (like priests gifting ‘blessed leaves’ to themselves) satisfies the MoM Commandments: The public (depositors) have been convinced to grant money-making-authority to bankers, we have implicitly assumed that inflation due to an increase in the money supply remains tame²⁵, and the mechanisms for the bankers enriching themselves are anything but transparent. In these instances, the bankers are still limited to paying themselves a portion of interest earned on the loans. There is, however, a much more effective way they may enrich themselves – should they be willing to compromise their ethics further. Unfortunately, human nature being what it is, it is often only a matter of time before one (or several) people appear to carry the mantle. The process we are about to describe is essentially a form of unethical self-dealing in the loan process.

In the previous examples we assumed that all the borrowers were (generally) honest or well-intentioned entrepreneurs – some of them achieved success, others did not. But if we relax that requirement we see a way in which dishonest bankers can gift themselves enormous amounts of wealth – far in excess of the ‘interest on loans’. The first example we use will violate the 3rd MoM Commandment – but is done for the sake of initial clarity. We will then introduce compliance with the Commandment to demonstrate more closely how this occurs in the real world.

As an aside, though I refer to corrupt bankers in these examples, please don’t walk over to your local bank and start calling people names! Away from the fact that this is an illustrative example, for us to collectively move beyond the predicament we all find ourselves in it is critical to move beyond blame. I address this point in more depth shortly, however if you find yourself feeling enflamed I suggest you skip ahead to the section entitled ‘This, Here, Now’ and read the first piece, ‘A Very Human Aside’ before returning to continue with this section.

On the whole, most people – regardless of who they work for - are decent and good. The vast majority of those associated with the enterprises we will discuss (banking, military contractors, etc.) are very likely unaware of the damage their employers facilitate. Even the much-maligned evil ‘Wall-Streeter’ has in many ways received a bad-rap. There is no shortage of individuals who have been misguided at one stage or another – let’s not make this personal. Most people simply want to ‘earn an honest living’, and believe they are doing so. To those that who after reading this begin to question the ethics of their current occupation, I suggest gentleness in self-remonstration, but resoluteness in determining to alter the course of one’s actions.

Funnily enough, a good demonstration of this may be found in the popular comedic film and Broadway show ‘The Producers’, written by Mel Brooks. In it, two Broadway show producers realize that while a successful show can be profitable, an *unsuccessful* Broadway show (if approached dishonestly and craftily) can be *enormously profitable*. They raise as much money as possible from investors (selling ownership interests in the play exceeding 100% many times over – not unlike a bank issuing more notes than gold!) and then plan to put on worst show possible – one that will flop

²⁵ We haven’t specifically addressed this, but it has been the ongoing assumption for our examples.

after the first showing and allow the producers to keep all the capital raised (they will simply tell the investors that it had all been spent, and nothing was left – keeping it all to themselves). Of course, as this is a Mel Brooks comedy, things go hilariously wrong when the show they intend to be a detestably offensive flop (written by a Nazi and called ‘Springtime for Hitler’) becomes an unexpected smash hit.

While ‘The Producers’ is a fun example, we’ll use a more banking-oriented version to make the situation clearer – using a dishonest banker and his 2 dishonest brothers. The ‘scam’ is perpetrated as follows:

The banker lends his 2 brothers’ new business 1,000 ounces of gold to start a project. The business plan (at least on paper) is to build a machine that solves the age old quest of turning lead into gold. In reality though, neither the banker nor his brothers have any intention of this plan succeeding – in fact, they don’t even *have* a real plan for the product – it’s a scam. Here’s what happens instead:

As soon as the brothers receive the 1,000 ounces of gold notes into the company account, they pay themselves an annual salary of 999 ounces of gold. They then ‘invest’ 1 ounce of gold in taking out advertisements seeking inventors who might know how to turn lead into gold (to demonstrate that they ‘tried something’). When the advertisements come and go with no success, the brothers call the banker and tells him that ‘their venture has failed’ – they will not be able to pay back the loan. The company files for bankruptcy, and the bank takes a complete loss on the loan – all 1,000 ounces of gold. Of course, the brothers *have effectively gifted themselves* the 999 ounces of gold, which are happily shared amongst all three brothers. They have been enriched enormously and the depositors have paid for it.

There are of course many permutations of the above scenario – some even involving the situation where the banker continues ‘extending new loans’ to the company to postpone the day of reckoning (otherwise known in banking parlance as ‘extend and pretend’). Whatever the case, and whether recognized now or later, a bank robbery has occurred under the auspices of normal banking practice.

The above example however, as we stated, would violate the 3rd MoM Commandment – it is too obvious. But there are many ways that it can be perpetuated such that it is sufficiently opaque in its operations.

Let’s pretend we are the unethical brothers’ advisor²⁶ and see what changes we can make to improve upon the scam.

We need to find a business idea that will allow the brothers to ‘spend’ most of the money in the normal operations of the business but at high enough profit margins that they can still extract significant value for themselves while operating under the guise of ‘a legitimate business’.

The first idea we have is to open a bakery, which we do under the name of Brother #1. Rather than paying himself 999 ounces of gold as a salary (which would be quite obvious) he instead pays himself a more reasonable 10 ounces of gold. In addition though, Brother #2 opens a baking-supplies company (let’s assume he doesn’t need a loan to open this company). The supply company will buy flour, sugar and eggs from farmers, and sell them to the bakery owned by Brother #1 for a profit. Since no one can tell the bakery itself whom to use as supplier, this is an effective mechanism for the brothers to transfer money to themselves.

²⁶ More Saul Goodman than Jimmy McGill.

The Power of Money: A Case for Bitcoin

The bakery (Brother #1) buys ingredients from the supplier (Brother #2), but *overpays for them*. Whereas normally he could buy all the milk, eggs and flour he needs for 100 ounces of gold a year, he ‘strikes a bad deal’ with the supplier (Brother #2) and agree to instead pay 200 ounces of gold every year. Doing this accomplishes two things:

- 1) By stretching out the time involved, it becomes less obvious that they are doing anything wrong. Yes, the bakery will book losses each year (as they won’t be able to sell finished baked goods at a profit by overpaying so dearly for the ingredients), but these losses will be spread out and so easier to conceal.
- 2) The profits are recognized by the Brothers (all three) through another degree of separation – this time, through the distributor who earns an extra 100 ounces of gold a year pure profit for as long as the contract remains in effect.

There remain a few problems with this arrangement though, which are limiting how much the brothers can enrich themselves. First of all, the market for baked goods is extremely competitive and well understood. When an outside auditor sees that Brother #1 is paying double the market rate for raw materials, they will flag this is a question and we will have to either adjust our rates or admit the fraud.

What the brothers need to improve this situation is a business model where the products bought don’t have an immediate and obvious value cap. The value cap for wheat flour is pretty clear – there are substitutes. If wheat becomes too expensive, then people can switch to rice or barley. Additionally, from a competition perspective, anyone with a bit of land and seeds can grow wheat, so supply can be added to the market anytime. This can keep a ceiling on what prices may be reasonably charged without drawing undue attention.

We might try and solve these problems by finding the brothers a suitable alternative business or industry (Healthcare springs to mind as a starting point for those curious to explore how that ‘solves’ many of these problems, though we take a different tack here). However, no matter what industry we look to, they will all be limited by the need for profits to ultimately be realized. The goal of any ‘business’ is to make money, and if the business only loses money (by having value siphoned off by dishonest owners and operators), eventually it will be shut down. What we need instead is a ‘business’ where profit in monetary terms is irrelevant. Lucky for the brothers in our example, such businesses do exist and generally fall under the purview of Government.

Government – the Ultimate Cover Story

Most people are put to sleep by talk coming from politicians about the need (or lack of need) to have a ‘balanced budget’. Balancing the budget is often described in ways that make it more complicated than it need be. For our purposes, we may refer to a government having a ‘balanced budget’ as simply one that on a net basis, *does not lose money* – that is, the amount that is spent is no greater than the amount of income earned (*importantly*, without having to borrow any funds to make up a shortfall).

The U.S. government’s tens of trillions worth of dollars in debt is testament to the fact that the government routinely does *not* have a balanced budget, and instead spends far more than it earns in tax (and other) revenues each year. The way that it is able to ‘keep going’ is by *borrowing more*. If this reminds you of the earlier example (Unaligned Incentives Part 2) then you can pat yourself on the back, as it is in many ways the same mechanism occurring. The U.S. government may be thought of as effectively insolvent, and from the traditional perspective of lenders, should not be extended

any more credit. That more credit *is* being extended in the form of new loans each year is a demonstration of the national (and international) banking system continuing to ‘extend and pretend’ with one of their biggest customers.

If you doubt that the U.S. government is in a poor fiscal situation (and so is poor credit risk) consider this: even if the U.S. federal government cut *all discretionary spending* to zero – there would still not be enough income left over to pay interest on existing debt. To pay the interest, the government must instead borrow more money (again, like in our earlier example).

We will shortly explore what has allowed the government to ‘avoid a reckoning/accounting’ up until this point, but first let’s return to our example of a crooked banker scheming with his 2 brothers to siphon money to themselves under the guise of a business loan. We now have enough pieces to put together the way these things actually happen (albeit in a far more simplified version to reality).

The banker is the central bank, along with its member banks who (at least partially) own the central bank itself²⁷. Brother #1 is the Federal government who borrows money from the banker to engage in the business – let’s call this business War, or in better Newspeak²⁸, ‘Defense’. Brother #2 is a military contractor who supplies all the weapons of war to the Government.

The military contractor business is a fantastically profitable one. Most of the (direct war) products sold are ‘one time use only’. Bullets, bombs and missiles may only be used once and so need constant replenishment (so long as there is an enemy to shoot them at). ‘Security’ technologies (screeners, sniffers, surveillance technology) can conveniently be ‘never quite enough’ to remove all risk, always requiring more. Then there are all the ancillary services which offer endless opportunities to overcharge – from fuel, to logistics to ‘rebuilding projects’ after active hostilities have ceased. So long as members of the public are continually convinced that there is a dire threat (ideally, an ever-present and amorphous bogeyman from a far-away place²⁹ who cannot be dealt with in any way *but* with violence) they will demand that money be spent by the government (to the contractors) to fight the danger. Their ‘customer’, the government, isn’t concerned at all with profitability – in fact, it’s barely even an afterthought. The bankers continue to extend new credit to them year-after-year to fund the projects. Furthermore, the industry has significant barriers to entry. There are all sorts of registrations, security clearances and the like keeping participants relatively few, and thus enabling contractors to charge exorbitantly for their products³⁰. This is sadly, the world in which we currently live, and is known (usually outside the U.S.) as the ‘global war economy’.

I do not mean to represent the war economy as the only beneficiary of this corrupt financial arrangement. Indeed, it is only one aspect of what American President Eisenhower warned the country of in his farewell address as the ‘Military Industrial Complex’. Nevertheless, I draw attention

²⁷ It is worthwhile noting that while the Federal Reserve is a *private* (not government owned) institution that wields enormous power over the entire world – *the public does not know who all the owners are*. Furthermore, even while there are areas of activity within it that are causes for concern, an audit has never been done. If you’ve wondered up until now what people who call to ‘Audit the Fed’ are referencing, this is it.

²⁸ If you haven’t read George Orwell’s novel *1984* please do so. Orwell coined the term Newspeak in the novel.

²⁹ Appealing to human being’s innate xenophobia is a terrific bet. If these bogeymen are represented as sufficiently culturally different, it also enables the public to de-humanize them and their cohorts.

³⁰ If you question whether there is indeed endemic graft and misappropriation of funding in the US Defense industry, you need only compare the US military budget to, for instance Russia. You may note that despite its egregiously larger spend, there are many who convincingly argue that the U.S. does not maintain a significant advantage (if one at all). Similar demonstrations can sadly be made (though not necessarily in comparison to Russia specifically) in the US Healthcare and Education industries (among others).

to it as a representative demonstration of ills that have sprung from our imbalanced and corrupted monetary system.

Chapter 6: How We Got Here

It's clear to anyone paying attention (and not believing the carefully spun narratives presented by bought and paid for news programs) that our world's current monetary system is broken and continues to spin out of control – only being kept together by active manipulation and machination. So-called markets continue to make new highs while the social and economic fabric surrounding them disintegrates. So-called experts have been reduced to discussing absurdities like 'negative interest rates'. All the while, efforts to keep the populace distracted from the root causes reach dizzying proportions. You may be wondering just how things got so off track, especially when there appears to be a solution (the gold standard) that could seemingly keep things (relatively) in line. As such, I'd like to run you through a quick history – one that isn't taught in most school textbooks (much like this whole paper) but yet one that I think adequately touches upon (if not fully vets) some of the more relevant points and events in history³¹.

Early Warnings

If you were wondering if any of this material is new – it isn't. The founding fathers of the United States of America were by and large keenly aware of these monetary mechanisms³², as well as the possibility for it to be used for the benefit of malevolent elements within society looking for power and control. To show this, let's return to the example we had of our gold-backed bank, where bankers had effectively garnered the power to 'create money' – and through the lending mechanism had made far too many loans out to the public – perhaps even continuing to extend credit to failed enterprises so that they could continue to reap interest income. The impact of this happening would be as follows:

First, inflation would rise. This is because the amount of 'money' in the system (due to excessive loan creation) would have risen dramatically. Remembering that it is in the banker's self-interest to create as many loans as possible³³. To use a simple (and simplified) illustration, there are more units of money chasing the same amount of services around – especially if the loans made are of the dubious kinds we've discussed. Throughout this process, the bankers would be getting wealthier, as well as the beneficiaries of their bad-loans (like with the banker and his two brothers). Eventually though, there would be a reckoning – a bank examiner would figure out that the bank was insolvent and the depositors would be left to absorb the losses. These losses would ensure that depositors (the general public) would be *poorer*, as they would need to spend more of *their* money to plug the hole. As such, there would now be *less* money in the system, and so *deflation* would occur. People would (on average) have less money to purchase 'stuff', and prices would go down. Of course, the

³¹ For those interested, I highly recommend Howard Zinn's People's History of the U.S. Last I checked, it was free to read at the website 'historyisaweapon.com'.

³² Understanding of these issues goes much further back, but I think beginning here with the time of Jefferson suffices.

³³ If you are looking for modern day analogues, consider (sub-prime) mortgages, student-loans, auto-backed loans, and now the plethora of 'personal loans' advertised seemingly everywhere.

bankers and corrupt businessmen would have long since stashed their wealth in actual gold or other real property, thus immunizing themselves from the inevitable crash in the bank's solvency.³⁴

So to summarize, there is inflation – whereby the ‘bank robbery occurs’. Then there is deflation once ‘the jig is up’. When the dust clears, the bankers and their cronies are wealthier than ever while others around them are impoverished.

Now read this quote by American founding father Thomas Jefferson, and see that it speaks precisely to what we have just described:

“I believe that banking institutions are more dangerous to our liberties than standing armies. If the American people ever allow private banks to control the issue of their currency, first by inflation, then by deflation, the banks and corporations that will grow up around [the banks] will deprive the people of all property until their children wake-up homeless on the continent their fathers conquered. The issuing power should be taken from the banks and restored to the people, to whom it properly belongs.” – Thomas Jefferson

Since Jefferson's time there have been countless individuals who have warned against the consequences of bestowing the power to ‘create money’ to a select group of people. Most of the time this has taken the form of demonstrations and railings against central banking – including the current Federal Reserve. It takes only a bit of research to see that calls to ‘End the Fed’ began long before U.S. Congressman Ron Paul wrote his book of the same name. There were in fact calls to *prevent it from coming into being* in 1913. It wasn't until the end of World War 2 though that the truly malevolent impact of U.S. central banking was given a ‘turbo boost’.

After WW2, the U.S. found itself in a remarkably powerful position – and incredibly exposed to risks of financially led corruption. At the same time as the U.S. ‘Military Industrial Complex’ had been birthed, a new mechanism for creating currency to be funnelled *to it* was created. In short, the U.S., as the sole global superpower, had its currency (the U.S. Dollar) transformed into the world's Reserve Currency.

Reserve Status

Throughout economic history, the world has had varying single currencies dominate global trade - often going hand-in-hand with the military and political power of the currency's sponsoring country. The dominant global currency has traditionally been referred to as a ‘global reserve currency’, and while this title is (and was) never ‘officially’ bestowed, it is generally fairly obvious when a currency reaches that status. For instance, for the past several decades, the US Dollar has been the reserve currency of the world, and as such, you could expect it to often be accepted as payment for international trade between countries (even when the U.S. isn't directly involved!) as well as being sought after and accepted by citizenry of countries all over the world. Before the U.S. Dollar, the reserve currency was the British Pound Sterling, and before that the French Franc, and then the Dutch Guilder. The reason it's referred to as a ‘reserve’ currency has to do with one of the definitions of the word reserve: “something stored or kept available for future use or need”. People generally have faith from one day to the next that the globally dominant currency will maintain its

³⁴ If you are wondering what sort of numbers we are talking about with regard to the current ‘reckoning’ that is imbedded in our current system – consider this: U.S. Federal debt is over \$20 trillion (about half of that creates in the last 10 years). When you add Social Security and Medicare obligations to that number, it quickly reaches well in excess of \$60 trillion (arguably substantially higher). Assuming U.S. population of 350 million, that's \$175,000 of debt which the average (unwitting) member of the public (man, woman, child) will need to account for – and the number is rising each year. Did you know that you were signed up for this?

status, and so use it as a *store of value*. They may hold dollars in local bank accounts in foreign countries as ‘safe’ savings (especially if they don’t trust their *own* government’s currency), or figuratively (and sometimes literally) hide dollars under the mattress.

In any case, the reaching of ‘global reserve status’ by a currency creates a *huge* pocket of demand for the currency, based *solely on people’s use for it as a store of value*. People seek the reserve currency *simply to sit on it, and hold it for a rainy day*³⁵. This has vast implications for inflation. Previously, when we discussed inflation occurring through the money supply being increased, we glossed over a simple but crucial fact – that for an increase in money supply to generate inflation, the excess money *has to circulate in the economy*. If the priests in our old example blessed billions of ‘new leaves for themselves’, but never *did* anything with them (that is, never *spent* them in the local economy) then from an inflation perspective, they would have no impact.

With regard to our reserve currencies, people ‘holding it for a rainy day’, or ‘sitting on it’ as a store of value means that all those units do not circulate and therefore *do not contribute to inflation*. The impact of this is best shown by example.

In our original Leafistan example, the priests increased the money supply by about 5 million leaves per year (each), which assuming they entered circulation, led to inflation of about 2.5%. The Priests might have *wanted* to increase supply (to themselves) by 50 million leaves each, but this might have led to inflation of about 25% per year – far too high to avoid violating the 2nd MoM Commandment.

But what if the blessed leaves of Leafistan were considered a global reserve currency? If that were so, then we may assume that other countries’ citizens would want Leafistan leaves as a store of value – potentially up to 50 million worth a year. With that sort of ‘reserve currency demand’, the priests *could* increase the money supply by 50 million, as once spent by the priests, most of that would drain into the mattresses and bank accounts of reserve currency seekers abroad – preventing inflation from occurring in Leafistan and allowing the priests to stay within the confines of the second MoM Commandment.

To summarize, when a currency has reached reserve currency status, the supply of that currency can be significantly increased without a corresponding increase in local inflation. This means that what was one of the ‘checks’ to keep the priestly (or banking class) from issuing too much currency (the 2nd MoM Commandment) is largely circumvented.

So finally, with that said, we can move back to our real life example, and the situation the U.S. found itself in at the end of World War 2. With Europe (and the UK) devastated, and the U.S. having emerged as the global military superpower, the US Dollar cemented its status as the new world reserve currency. That this happened at the same time as the birth of the Military Industrial Complex (MIC) meant that vast sums of money could now be printed and funnelled *into* the MIC, enriching all participants, without causing runaway inflation. One of the safeguards (the threat of generating runaway inflation) which was previously preventing bankers (and central banks) from funding dangerous and corrupt projects was removed. The history of American military interventionism since then sadly speaks for itself to anyone willing to research.

³⁵ This is admittedly an oversimplification. There is demand for reserve currency not just for store of value, but other moneyness aspects. Furthermore, it may be *spent* in foreign countries, which can lead to a concept called ‘exporting inflation’. We note these complications, but spend no more time on them here as the net effect in the country of the Reserve currency’s sponsor is the same – a greater ability to grow the money supply without generating local inflation.

Gold & Oil – The Last Safeguards Fall

Even with the US Dollar achieving reserve status (and thus allowing the money supply to be enlarged such that it enriched a privileged class through nefarious undertakings) there was still one safeguard left – Gold.

The US Dollar had in various forms always been linked to Gold, and as such, if lending got too ‘out of hand’ (like in our simple banking examples), investors could simply redeem their dollars for gold, and create what would effectively be a national ‘bank run’ against the currency.

Throughout the ages, Kings and Princes have tried to de-couple their currencies from gold, as only by doing so could they exempt themselves from the restrictions on money supply creation having gold as a currency-backing demands. Members of the groups controlling the US Dollar found themselves in a similar position. If gold was no longer linked to the US Dollar, there *could be no national bank runs* on the US Dollar. So long as inflation were kept subdued (or importantly, people were convinced that it was subdued) there would be no limit to how much money could be printed and directed into projects of their choice. But without gold as backing, what assurance could the bankers have that people would *accept* US Dollars as a valid currency?

The answer to this problem of assurance of acceptance was twofold. First and foremost, with the dollar as the global reserve currency and U.S. as a military superpower, they had a reasonable head-start. Much like Coca-Cola introducing ‘New Coke’ in the 1980s (where they could rely upon their distribution and marketing networks to ensure people would try it), the US could rely upon the Dollar’s reserve status to ensure that people would ‘try’ these new Dollars – no longer backed by gold, but by faith (otherwise known as Fiat Currency). Just like New Coke failed though, these new Fiat Dollars would ultimately fail if there wasn’t another *hook* that kept the US Dollar centrally required in global trade. This hook was provided with oil – and the system which evolved through it became known as the Petrodollar system.

By the 1960’s oil had grown to be arguably the single most important commodity for driving global industrial development, and therefore trade. It’s unlikely though that anyone in the United States ever seriously considered ‘backing dollars with oil’, in the same way that they had been backed with gold. First and foremost, the US simply didn’t have the oil supplies to do so³⁶. But more importantly, backing the dollar with oil (like gold before it) would defeat the purpose of having a pure fiat currency – unconstrained in its supply by linkages to real world assets. No, there would have to be a clever new solution to somehow merely *align* the dollar with oil, such that people wanted – *even needed* – dollars. The solution was found through striking a deal with a rich and powerful group – the ruling family of Saudi Arabia.

The deal, while in many ways horrific in its impact on the world, was in many respects quite beautiful in its elegance. The Saudis had enormous oil reserves, but lived in what some might call ‘the tough neighborhood of the Middle East.’ The Saud family had power and wealth, but many enemies – both external and internal. If they wished to maintain and even consolidate their grip on power, they would need powerful allies supplying them with weapons and protection. The U.S., as the leading world superpower, had the military wherewithal to provide the Saudis with military support – ensuring they maintained (and even grew) their power and wealth. The deal struck was therefore essentially as follows: the U.S. would support the Saudi regime by supplying them with all the weapons of war and oppression they needed to maintain their control over the region. In exchange, the Saudis would declare to the world that payment for their oil (which every country relied upon)

³⁶ Never mind that oil does a poor job of satisfying ‘moneyness’ criteria.

could only be made in U.S. Dollars. This was a win-win for both parties (though not for the average citizen of the world). The U.S. now had additional support to its currency as the world's reserve (in the form of global demand for dollars needed to buy Saudi oil). As this connection was not a strict-backing though, they maintained the monetary freedom of a fiat currency. The Saudis had their political and regional dominance guaranteed, and were further assured of enormous new riches. After all, America was the land of any type of consumer good one could imagine, and with their coffers filled with US Dollars from oil sales, the Saudis could go shopping for anything their hearts' desired.³⁷

And so, by the early 1970s, the United States had "successfully" abandoned the gold-standard, allowing it to create money with impunity, and use (and abuse) its power as master of the world's reserve currency. While the dangerous and horrific effects of this bargain were felt all over the world in various forms for decades, it took until the new millennium before its excesses and imbalances began to enter the consciousness of the average American citizen.

Gold – Not to the Rescue

Getting the public to reject a currency (effectively to force a renunciation of the first MoM Commandment) is exceedingly difficult if the other two commandments are still being upheld. Expecting the public to comprehend the complexity of the system is a tall order for sure, and makes it extremely difficult for people to realize enough of the situation to challenge the status quo – even as social and economic calamity sweeps across the land. The far more likely way that people will realize 'something is wrong' is through recognizing inflation. This is why it is so imperative to keep people convinced that inflation is 'tame' and under control – even when it is not³⁸. While there are many methods used to convince people that inflation is subdued and/or controlled (things like hedonic adjustments to inflation indexes, or chopping off 'zeros' from currency nominal values) there is the price of a single commodity which is looked to more than any other for determining whether a currency is experiencing inflationary effects – gold.

Even though gold hasn't officially backed the US Dollar since 1971, many still look to the *price of gold* in dollars as an indicator for the health of the US monetary system. If inflation were truly rampant, and the system itself was collapsing, then people would flee the dollar and purchase gold as a safe-haven store of long term value. After all, just because the dollar isn't officially backed by a fixed quantity of gold doesn't mean you can't still find someone willing to part with their gold for your dollars.

If for instance, gold was to suddenly triple in dollar price, more and more people would question the integrity of the Dollar money system – causing yet more people to abandon the dollar in exchange for gold - a feedback loop. Gold spiking in value would be a major warning sign *and accelerant* for people losing *faith* in the *fiat* currency – and as faith is all that back the dollar, the implications would be disastrous. For many 'gold bugs', that this will happen is just a matter of time, and they have positioned themselves accordingly – buying and holding large amounts of gold. Unfortunately for them, the pending skyrocketing of the price of gold has yet to materialize.

The MoM and administrators of the current monetary regime are (and have been) very aware of this prospect and through manipulative trading activity have been diligent in neutering its possibility. I

³⁷ There was also an element to the agreement whereby the Saudi's would invest their dollars in U.S. government debt, but we gloss over this here as it isn't critical to this aspect of the narrative.

³⁸ It also becomes increasingly important to keep the public distracted with issues that (while often have merit in their own right) often pale in comparison to the big issue of monetary structure.

will not go far into the details of their price suppression mechanisms, as there is currently ample material available for the interested reader to pursue with an internet search. Briefly though, the ability to keep the price of gold (and silver) artificially low is dependent on three things:

- 1) The ability to 'naked-short-sell' related contracts which are settled for cash, not settled in the actual physical commodity. This condition exists as the de facto standard on American exchanges.
- 2) The public being convinced that the price of gold *contracts* on these exchanges is to be used to dictate the price of physical gold - despite the fact that little physical gold actually *exists* in support of the outstanding contracts.
- 3) The party or parties manipulating the price of the commodities have the suppression of prices as the utmost goal, with profitability and/or notional trade-size limits being considered all but irrelevant.

Perhaps the greatest limitation of gold as a modern solution to our 'money ills' though exists beyond the fact that its price is currently being manipulated lower. Instead, its fundamental drawback as the true basis for 'money' today is based upon three features.

- 1) It is a physical thing, and so not conducive to electronic transfers.

If we hope to maintain our current levels of technological advancement and interconnection, having a money that can be represented as a digital medium of exchange is vital. We cannot expect all transactions across the internet to suddenly rely upon physical gold transfers. This necessarily leads to the second feature.

- 2) Displacing fiat with gold would *still* require an intermediate currency to be used as a modern medium of exchange.

Unless scientists can learn to transmit gold over power lines (they cannot), we would need to return to a digital *representation* of the gold. We would need a new currency. It could be called eGold, or BitGold, or any such thing, but ultimately, it is *not* gold – just another currency that claims to be represented on a fixed basis with physical gold. This then necessarily leads us to the third feature.

- 3) We would again find ourselves in a position where we have to 'trust' some new 'Masters of Money' with the proper accounting and safekeeping of the physical gold itself, as well as its direct proportionality to the currency supply.

This essentially brings us right back to the situation where we had a gold-backed currency issued by bankers. It does not fundamentally alter the structure of our money systems, and yet again leaves the public beholden to a 'Priestly Caste' to represent that all the gold is accounted for and kept safe – and that none of the fiscal experiments of old will be repeated, despite the inevitable and irresistible temptations.

It is also no trivial matter that there exist many thoughtful and intelligent individuals who question whether even now, the U.S. (and other governments) actually *have* all the gold they claim to possess. A cursory examination and review of the 'audits' of the gold in, for example, Fort Knox, bring up inconsistencies and logical holes big enough to (as the saying goes) drive a truck through. Regardless, even if all gold held in custody by governments *is* properly accounted for, corruption of the system would be inevitable. This is because once again, placement of money stewardship powers would be handed to a small elite.

Chapter 7: Enter Bitcoin

I hope that by this point, you see that many evils are borne out of having an un-fixed money supply. The power to create new units of money is - like the One Ring from Lord of the Rings – too powerful to be wielded by a mortal without becoming corrupted by it. The notion that humans can be trusted with wielding this power must be once and for all consigned to the history books as a description of imbalanced structures in times long past. While gold has held (for many) the promise of being the foundation for a new, finite and sound money system, it not only has failed to overcome the barriers of the current monetary regime, but has further limitations as described above. Bitcoin however, is a different and exciting story. Let's first begun by quickly reviewing the moneyness of Bitcoin to 'get on the same page'.

Bitcoin's Moneyness

Bitcoin, like gold passes the Store of Value test with flying colors, and in many ways surpasses it. There will never be more than 21 million bitcoins in existence, and so long as the Internet remains functional and even modestly accessible, they will remain durable and untarnished. This is in contrast to gold, where the total amount that exists on Earth will forever remain the subject of speculation, not certainty.

Also like gold, Bitcoin passes the Unit of Account test. They are effectively infinitely divisible and uniform.

With regard to Medium of Exchange, Bitcoin *actually does better than gold* in many ways. Critically, Bitcoin *does not need an intermediating currency*. Bitcoin can serve as both money, *and* direct medium of exchange. Not needing an intermediate currency means that the public need not entrust the Power of Money in the hands of any group of mortal men.

Of course, there is still value in gold, as Bitcoin relies upon the premise that our modern society (with electricity and networked computers) *will* survive the turbulent times of today (and tomorrow) and not be 'knocked back to the stone age'. Though this limitation is real, it is far more appealing to me to take steps (some of which I will outline shortly) which can serve to navigate us all into a better world, rather than giving up on humanity and anticipating devolution as inevitable. We must recognize that this decision – to believe either in *evolutionary* movement or *devolutionary* movement is, together with concurrent activities, a self-fulfilling prophecy. As the saying goes, 'No one is coming to save us from ourselves.' We must act with faith and vision to ensure our balanced today and tomorrows.

The Threat of Bitcoin

Much has been said and written (predictably, by those who stand to lose the most by Bitcoin's success) about the threats and dangers of Bitcoin. While there may be small kernels of truth in these arguments they are as a whole vapid and empty arguments. The threat of Bitcoin is extremely real, but only exists inasmuch as it may displace existing power structures – namely, removing the power to create money (and thus control people and events) from those who currently wield it. That this particular class of 'priests', as well as the classes of those who rely upon their largess, fear the coming 'overturning of the money-changing tables' is understandable and unsurprising. The onus though is on *everyone else* to see the truth and so to reject their attempts to obfuscate and deceive. To be fair, to the extent that serious social changes occur as a function of Bitcoin adoption there will undoubtedly be disruption. But considering that the future to which 'leaders' seem intent on marching the world toward includes war, strife and oppression (with 'salvation' from these ills of

their own devising advertised as achievable by giving them even *more* power and authority) - reasonable alternatives have appeal.

In a world where governments increasingly rely upon threats to extract tax revenues from their populace (who have begun to realize en masse that they are *not* represented by politicians on matters of importance) the prospect of having to rely upon citizens *willingly transferring* tax revenues to the state is understandably terrifying to those in power. What citizen feels that their tax revenues are being used responsibly, as opposed to for the perpetuation of massive social ills such as surveillance, war, and the enrichment of elites and their cronies? With the exception of high-stress interrogation-type tactics, Bitcoin cannot be extracted from an unwilling giver. Encryption keys can easily be hidden and are essentially un-hackable³⁹. In a world where entire generations of people have been sold into indentured servitude by the Higher Education, Healthcare and Housing Rackets, the prospect of an economy existing outside that in which their debt burden lives is understandably terrifying to lenders.

I would like to be clear here that I do not believe in the abrogation of personal responsibilities – including taxes and indebtedness. However, I do see that as people become increasingly aware of our collective plight, the prospect of there being an alternative to taxation-without-representation and indefinite debt-serfdom may spur on honest and productive re-assessments on all sides.

Visions for the Future – The First Two

These are frightening and uncertain times for most of humanity. Financial, social, political, and religious systems are collapsing – leaving a void which has so far been filled with fear, anger and hopelessness by those who would seek to use crisis as opportunity. There are however, 3 scenarios which I, broadly speaking, see as possible. Through briefly describing them, I will try to express what I see as the benefits of Bitcoin adoption. I describe the first two here, and return to the third in a further section.

Neo-Feudal Dystopia

This is the version of the future in which structures that concentrate power into the hands of the few either remain intact or are strengthened. With ‘money making the world go round’, this is the equivalent of ‘Sauron re-claiming the Ring, from out of the hands of Frodo’. Fiat currencies maintain their grip on world economies – which is another way of saying that those relatively few ‘priests’ who control the world’s money supply can continue to manipulate society with power unchecked across all caste and creed. It is likely that there would be agitation toward further centralization of power outside of money – abdication of individual rights in favor of ‘the government’ – or ultimately ‘Big Brother’ in whatever name it decides to adopt. The world would enter a neo-feudal age where those in control continue to motivate others to do their bidding – often in clever ways that mask the fact that they are being kept at serf status. Things like ‘universal basic income’ and ‘unification of governments’ are marvellous examples of brilliant and manipulative marketing – on par with the best propaganda of any recorded human age.

I personally see this outcome as the most unlikely. There are many millions of individuals becoming increasingly aware of the traps gathering around them, and many of them are willing and (in many ways) sadly, eager to react violently. As pending conflict(s) may prevent this form of dystopia from

³⁹ Yes, there is the possibility of future quantum computing advances breaking the encryption. There are however already technologies that may be implemented via a future fork of the chain to offset this risk.

occurring, the next form of the future is in my view more likely, though not the likeliest – and certainly not the most desirable.

Collapse Dystopia

This version of the future is more akin to the ‘Mad Max’ movies. In this version, while many of the corrupt elements to societal mechanisms are removed, the ‘baby is thrown out with the bathwater’. Many wonderful and evolutionary elements of modern society are lost. This is a world where the social fabric, including the ability of even the Masters of Old to maintain ‘order’, collapses. This is the world of the ‘survivalist’ and the ‘prepper’. The key physical elements for survival in this world are thought by some to be:

- Access to fresh food and water, away from potentially disrupted supply chains
- Shelter that accommodates the above
- The means to defend the above as required (for many, this means firearms)
- A form of money that would ‘hold its value’ (this eliminates fiat currency as a possibility) as well as be immune to widespread power-grid disruptions (this potentially eliminates cryptocurrencies). As such, physical gold and silver hordes would likely become the de facto standard for ‘money’.

This form of dystopia is essentially the route taken throughout most of human history when societies have collapsed. It represents retrograde motion in terms of our collective human evolution, as advances in knowledge and awareness are lost.

If we allow ourselves to fall into this path, thousands of years of knowledge and wisdom can be lost in a destructive instant.

This is the lesson of the great fire at the Library of Alexandria. This is the lesson of the countless civilizations who have disappeared from the Earth, leaving only a tale of *their decay and fall* in the archaeological record – but no true description of the advancement at their civilization’s pinnacle. It is sadly all too common in modern thinking to assume that history and knowledge move forward throughout the ages in a straight line of progress. The truth is, we as a species have not been able to ‘hold it together’ for long enough stretches (before dissolving in conflict and strife) to evolve past these repetitive and chaotic outcomes. Let it not be forgotten by any who question this fact that while the Ancient Romans enjoyed the convenience of indoor plumbing, ‘more modern’ Europeans hundreds of years later dealt with their bathroom functions by defecating out windows onto the streets below.

Chapter 8: This, Here, Now

A Human Aside

While this paper may appear to be predominantly on economics and money matters, I feel obliged to take a moment to share perspective on the bigger picture. Who we are as a species, and how evolved we allow ourselves to become, is deeply intertwined with how we interact with money and in what form we use it. This is because money, as the *promise of wants satisfied*, touches upon deep primal currents that live within us all - currents which whisper questions to us about our level of connectedness with life, and indeed about the nature of life itself. But money is only one aspect (albeit a significant one) to the situation in which we all collectively find ourselves.

There is a bigger transformation occurring than what money we use, what flag we wave (or don't) or whether we consider ourselves in the 'yes' or 'no' camp of a particular issue. We are all evolving— and on dimensions that were previously outside the periphery of our vision. There is an awareness growing in the world, and it is something that I see in the eyes of nearly everyone that I meet. For anyone sensitive, often only modestly so, these past several years have been amongst the most trying, humbling, and intense of our lives. But yet they've also been the ones in which we've grown the most. We have gotten a better glimpse (often 'the hard way') of who and what we really are.

We are discovering that the big questions – those that we have for generations been discouraged from asking – are coming to the fore. None of us are immune to at one point or another (perhaps our entire lives up until this point) being distracted from this growing awareness through means of sedation and control. Sometimes these distractions are obviously self-inflicted. Other times, (such as with some of contents of this treatise) it may appear that we have had the distractions thrust upon us.

It is vitally important to not turn this into a 'blame-game'.

None of us are free of some guilt of ownership of the world in which we find ourselves. We have all had experiences where we contributed to its imbalanced condition. At the same time, none of us are without some innocence - we were all born into a societal structure that was intact and running while we were still in a pre-conditioned infant state. We have all 'done our best' with what we have been given and where we have been placed. To focus on blame, rather than assuming personal responsibility in our own lives *now* is to miss the opening which the current state of our world provides.

Evolution cannot occur amidst an environment of witch-hunts. Without an appreciation for amnesty, there can be no lasting peace. To think that we can eradicate what we perceive as 'our enemies' with reactionary aggression is to misunderstand how experience flows. The energy of opposition must be integrated and assisted to evolve, not stifled or attacked so that it simply changes form while maintaining its antagonism.

The Third Vision

The third vision I would like to share is one of a world with humanity more deeply connected to one another – not just via technological innovations (which are nonetheless still appreciated) - but with an awareness that we all live here on this Earth in a shared predicament. We all face fear; we all face loss; we all face death. It is through honestly acknowledging our collective feelings that we truly *realize* there is nothing to fear. We integrate the message of the Abhaya Mudra – the simple hand gesture depicted in statues of teachers from long ago – and feel it. Once this happens, what seemed like the nasty and unfortunate occurrence of being born into this world shows itself for what it truly is – the blessing of a loving and evolving experience.

However, as with any injury, the open-wound of our collective humanity must be treated in a particular order. Before it can be healed, it must first and foremost be cleansed. All bacterial, infectious and parasitic organisms must be *gently* removed from the wound area. This often hurts, as no attachments may be broken without some pain. But once done, balance organically restores itself.

I would like to leave this vision of the world relatively short and open-ended. I do not know what form it may take, but I believe that it will arrive with a higher degree of certainty than any of the two previous dystopian visions. I present it therefore as a series of questions:

How might the world be different if the mechanisms through which trillions of dollars are siphoned each year to perpetuate corrupt systems and structures (largely against the will of the public who provide it) were rendered impotent?

How might the *cost of living* be changed if wealth were not siphoned into the hands of the few via the corrupt mechanisms we have so far described?

How might we view social, racial and class distinctions in a world driven by *deflationary* forces, such that the material world essentials for healthy living were available to all?

How might we begin to view ourselves and all those around us if we lived with a calm certainty that we would always have *enough*?

Practical Steps

There are actions we all can take today that will have a profound impact towards facilitating this evolution away from systems of old to a new ‘sound money’ future. That is, one where we all return to an appreciation of the higher definitions of money – appreciating it as a tool to facilitate equitable transfers, rather than a promise of desires satisfied that may be used as a weapon against us.

This change is not a war, and requires no one to pick up arms and fight. It simply requires that we take steps to facilitate a re-focusing of our money system *away* from fiat and *toward* fixed-supply. We must remain resolute in our determination to do so, regardless of inevitable obstacles and circumstances where we are deliberately incited to alarm. Evolution does not occur through reactionary aggression – whether initiated or provoked. It occurs through *redirected attention and intention*.

From a practical perspective, I offer a few suggestions that I believe will facilitate this movement. This list is by no means exhaustive. If you are inspired to find other modes and methods that work for you, by all means share them as appropriate. But for those interested, I offer these to you.

1) Continue to buy Bitcoin.

There’s a saying in microeconomics (the study of business finance, as opposed to the study of larger economic systems): “People vote with their wallets.⁴⁰” This is to say that regardless of how people may express their viewpoints when *asked*, the ultimate expression of their opinion is voiced when they *spend their money*. For instance, you may *say* that you oppose the War Economy, but by simply participating in the Fiat economy you are indirectly supporting it. Instead, I propose a modest alteration of the saying:

- “Vote with *what you select as your money*”

Buying Bitcoin (or other relevant cryptos) demonstrates confidence and support of the new paradigm, just as it simultaneously demonstrate the *lack of* support for the old paradigm. Every time one buys Bitcoin (and simultaneously sell Fiat Currencies), a message is being sent that people no longer want to play the rigged games. Instead it serves as a vote to emancipate all of ‘us’ from the restrictions of the corrupted mechanisms in which we find ourselves. This buying also generates upward pressure on the price of Bitcoin, which has very particular consequences we will address in the Valuation section.

2) Accept Bitcoin as payment in transactions, and at a discount to fiat prices.

⁴⁰ Another version of the saying is ‘putting your money where your mouth is.’

Despite Bitcoin's incredible rise in price, the percentage of the populace who actually *owns and transacts* in Bitcoin is exceedingly low. For Bitcoin to displace Fiat currencies, it must be used as not only a store of value, *but a transactional currency*. More of the general populace must be brought into the ecosystem and become acquainted with acquiring and spending Bitcoin. One way to do this is to make it clearly in people's immediate best financial interests to participate. Expecting the average 'man on the street' to read this paper and absorb all the information is a tall order, but expecting the same person to appreciate that they can get a better deal *if they pay in Bitcoin* is much easier.

Wherever possible – whether trading with friends, on Craigslist or *ideally as a business*⁴¹, let counterparties and customers know that you will accept Bitcoin as payment at a *discounted price to Fiat Currency*. I propose a 10% discount⁴², though you may of course pick whatever discount works for you.

For example, assuming you are in the U.S., and selling a bicycle on Craigslist for \$1,000 – advertise that you would be willing to accept only \$900 worth of Bitcoin for the bike. Rather than exchanging cash or a wire-transfer, you may do an on-the-spot Bitcoin transfer – using the reference price of Bitcoin at any of the many online exchanges (I favor Preev.com as it aggregates prices across many sources).

There are several implications to doing this. Firstly, you motivate those who have not yet 'taken the plunge' into Cryptos to buy their first amount of Bitcoin – even if it is only to earn the savings that you offer on the item or service sale. While it is true that at the time of the transaction you may be taking a small 'loss' (whatever discount you offer), you are also taking *real action* to promote Bitcoin adoption, which may ultimately significantly improve the value of Bitcoin. As more people transact in Bitcoin, the '10%' the seller 'lost' would undoubtedly be made up many times over as the Bitcoin received further appreciate in value. Of course, once Bitcoin adoption rates are high enough such discounts will become increasingly unnecessary.

3) Do your best to remain informed and not fall for the propaganda that rails against Bitcoin and Altcoins as negative things that need to be controlled and heavily regulated.

Bitcoin represent an existential threat to many of the corrupt power structures in our society today – and it so happens that these same structures have vast media, propaganda and political resources at their disposal. It is likely that the rhetoric trying to paint Bitcoin in a negative light (whether belittling it, demonizing it, or calling for its outright ban) will increase. Do not allow yourself to be swayed by these appeals. Do not naively relinquish your right to determine for yourself what is suitable to be used as money. This is a decision we all must make for ourselves and for the future of our world. We must not allow ourselves to be scared or bullied into passively accepting a status quo that we can all see is devouring itself. Those managing and attempting to control public perception will never

⁴¹ Relatively few people own their own businesses and so have the discretion to make this decision directly. Most people though are employed by others and certainly have it within their power to raise the topic with employers, as well as increase patronage to businesses that adopt this mechanism.

⁴² For those who have an appreciation for different religious traditions, 10% is traditionally the amount used for 'tithing'. Whether you believe in religious tradition or not, it is to me intuitively appealing that a small 'sacrifice' (the 10%) is made – almost as an 'offering' to the advancement of the greater good. The fact that if it works as I envision, it would ultimately enrich everyone involved is icing on the cake.

earnestly offer momentous decisions like these to formally be ‘up for vote’⁴³. This is why we must vote not with ballots or protest signs, but with simple, distributed adoption, which can be neither be stamped out nor denied.

Chapter 9: Valuation⁴⁴

Unlike other Alt-coins (a few of which I’ve so far opined on in other notes) the basic valuation of Bitcoin may be done relatively simply⁴⁵. The difficulty lies not in grasping the math or logic, but in accepting the enormity of that which it represents. As humans, we are not used to seismic shifts and have no good reference points for assessing the meteoric rise of Bitcoin valuations. It is understandable that without an appreciation for ‘the Power of Money’ one may remain sceptical of predictions that Bitcoin will rise further in price – after all, what stocks or bonds in recent history have risen in value nearly as much as Bitcoin *outside* of irrational ‘bubble’ schemes?

Basic Framework

It is worth noting that while we will be using some traditional investment terms to describe Bitcoin, this is a bit of proverbially ‘mixing apples and oranges’. Things like ‘Market Cap’ and ‘Enterprise Value’ are terms used in finance to describe individual investments such as stocks and bonds, not money itself. We wouldn’t for instance refer to the total percentage of global M3 held in actual US\$ as the American Dollar’s ‘Market Cap’⁴⁶. It is partially because of this misguided use of terminology that people have difficulty accepting the enormity of Bitcoin’s value potential. To liken it to a stock trading on an exchange, rather than to major world currencies such as the US Dollar or the Euro – is to use the wrong reference set, and so make the final results look suspiciously large by comparison.

We may first begin by identifying the size of the global money supply, of which Bitcoin may prospectively assume a larger proportion. The metric that we will use to represent global money supply is M3, which tends to be used by economists to represent money used not just as a medium of exchange, but as a store of value. This includes cash currency, checking accounts, demand deposits, savings accounts, money-market securities, and time deposits. While global consolidated estimates vary somewhat, I use a current global value of US\$80 trillion equivalent. I believe that this number is somewhere between fair and conservative (i.e., to the low side).

If Bitcoin is successful over the coming years in displacing Fiat currencies, then we may simply ascribe a greater portion of that M3 ‘pie’ to Bitcoin’s ‘market capitalization’. While I leave it to the reader to determine what his or her own estimations are with regard to both M3 penetration and probabilities of achievement I will demonstrate an example which I believe to be reasonable.

Considering the advantages Bitcoin holds over Fiat currencies we might estimate that in a ‘Bitcoin Success’ scenario it garners 40% of global M3 attribution within 10 years. This means that its ‘market

⁴³ Attempts to convince people that ‘they have a say’ in government will be made with issues of strong emotional appeal but limited practical significance. This is already happening.

⁴⁴ If you’ve just skipped to this section without reading any of the previous ones, Hello! It is my belief that the sum total of this report before this section confers significant strength to the valuation assessment I will propose here. As such, I highly encourage you to review earlier chapters as they may not only impart deeper conviction in terms of the value and utility of Bitcoin, but the moral consequences of adopting (or not adopting) it.

⁴⁵ While there are many important nuances and details to consider I will reserve addressing those for another time and/or venue. My main focus here is to offer frameworks rather than detailed exposition.

⁴⁶ This number currently stands at approximately \$15 trillion of our \$80 trillion total – just under 20%.

cap' would be \$32 trillion, split amongst 21 million 'fully-diluted' coins – or approximately \$1.5 million per coin. We further may personally ascribe a minimum 2% probability to this 'success' case occurring⁴⁷. Therefore, the expected value⁴⁸ is equal to 2% times \$1.5 million, or \$30,000. If we further assume that current value for a Bitcoin is \$4,000 and the scenario unfolds after 10 years (and not before) we can deduce our expected rate of return. In Excel, the financial formula would be =RATE(10,0,-4000,30000), or ~22% annually for ten years.

Note though – this is *not* the return an investor today would actually earn if Bitcoin achieves 'success' as per this example. That return would instead be a nearly 375-fold increase in investment. This 22% is our *probability weighted return* today. That it advertises a yield substantially higher than the Risk-Free-Rate⁴⁹ points to Bitcoin currently being significantly undervalued based upon our penetration, timing, and probability assumptions. If we wish to value Bitcoin today, we simply need to discount our ten-year forward expected value (\$30,000 per coin) back to now at the Risk-free-rate (which we assume is 2.5%, the approximate yield on the current US 10yr Treasury Note). We do not need to apply any additional discount factors (or use 'risky rates') as we have already accounted for the probability in our initial estimation. All that is left is to account for the time value of money. The formula is therefore simply = 30,000/(1.025^10) or \$23,345 – approximately 6 times current levels.

Bitcoin as Insurance

Hopefully by this point you have been convinced that there is *at least a marginally* greater-than-zero probability that Bitcoin may displace global fiat as per our 'success' scenario above⁵⁰. Perhaps you instead think it's a 0.1% chance (1 in 1,000), or perhaps you think it's a 5% chance. Perhaps you think success penetration would be either 20% or 80%.

Let's instead assume that you give it a 1% chance of reaching an M3 penetration of 1/3 within 10 years. This success case would correspond to an approximately 300x increase in value from current levels. In this case, what sort of allocation to Bitcoin makes sense – *simply from an insurance perspective*? Wealth management is, after all, first and foremost about wealth preservation. If I believed there was a 1 in 100 chance that it would rise in value by 300 times, then I can do some simple math to determine an allocation that would leave me at least as wealthy as I am today in such a scenario – that is, not 'missing out' relative to everyone else. Consider it an insurance premium that pays off *just in case Bitcoin actually succeeds*.

This is best demonstrated by example. Let's suppose I have an investment portfolio currently valued at \$10 million. If I allocated 0.333% or \$33,333 to Bitcoin (that is, buying approximately 8 BTC) then I *ought* to be able to sleep at night, knowing that I won't totally miss the Bitcoin boat. If Bitcoin succeeds, and the price rises (as per our assumption) by 300x, then my initial investment will be worth \$33,333 x 300 = \$9,999,000 – approximately \$10 million – the initial (inflation adjusted) amount of wealth I currently have, *even if I exclude all my other investments from the final total*.

⁴⁷ For the purposes of this example, we can assume that all upside is capped at our definition of success, and any shortcoming results in a 100% loss of investment.

⁴⁸ Although it may not sound like it, Expected Value is actually a formal statistical and financial term. It's achieved by simply multiplying each possible outcome by the likelihood of each outcome. In our instance, we are ascribing a 2% likelihood to a value of \$1.5 million, and a 98% likelihood to a value of zero.

⁴⁹ Risk-free-rate. This is, of course a misnomer, and I find it almost ridiculously so – but in the interests of 'speaking the language of finance' I am treating it as valid.

⁵⁰ In case you were wondering, a current price of \$4,000 – while still adhering to our example's rules dictates that the implied probability of success is 0.341%.

Considering that investors typically pay insurance premiums far in excess of a *one-time* 0.333%, this should warrant serious consideration for anyone managing wealth⁵¹.

On Signalling and Feedback Loops

Near the beginning of this paper, we discussed the scenario in Leafistan where all citizens had the ability to 'create money' by collecting leaves. We were presented with a demonstration of how a system structured such that a particular behavior is encouraged (in that case, for people to go out and collect leaves) can have consequences that return to impact the sustainability of the system itself. In that particular case, the impact was one which would have caused the abandonment of that monetary system. A destructive outcome though needn't always be the case – and in fact with regard to Bitcoin, it isn't. What we see instead is that, once understood by enough people, the behavior that is encouraged actually supports the stability of the system itself – creating what may be called a 'virtuous cycle'.

In the earlier chapter of 'Next Steps' we offered up that something people could do to support Bitcoin was to *buy it*. That some might have a knee-jerk reaction to such a statement as sounding like a 'Ponzi scheme' is absolutely natural. However, it is no such thing. This is because in Ponzi schemes there is no culmination scenario that may be achieved through continued growth - outside of inevitable collapse. There is no crystallization event or threshold whereupon valuations previously perceived as 'too-high' are suddenly imminently logical and reasonable. In the instance of a new form of money being adopted though, that crystallization of value is a very real prospect. Its achievement would immediately validate nearly all prior 'leaps of faith'.

Buying Bitcoin has two primary consequences which are integral to understanding the 'virtuous cycle' to which we have referred.

- 1) When faced with buying pressure, the price of Bitcoin, like any traded asset (that cannot be manipulated lower) will rise.

While this may seem obvious, the consequences of the price of a Money/Currency rising are vastly different from the consequences of the price of an investable asset rising (such as stocks or bonds). Let's first examine the latter case (with stocks).

When a stock rises in value, the underlying fundamental investment thesis of the stock itself rarely improves – in fact, the future valuation returns typically get worse. For instance, If Apple stock is trading at \$150 a share today and you believe it is 'worth' \$200 a share, then if tomorrow it begins trading at \$175, your *prospective* returns from tomorrow onward are now *lower*⁵². Whereas today you expected to earn $(\$200 - \$150)/(\$150)$, or a 33.3% return, any 'new money invested' at the new price would return only a $(\$200-\$175)/(\$175)$ return, or ~14% return. Your price target *may rise*

⁵¹ If we assume that just 5% of those controlling the approximately US\$40 trillion in investable wealth controlled by High-Net-Worth individuals acts this way, this alone would represent incremental demand for Bitcoin in the amount of nearly \$7 billion, or about 11% of its total market-cap – not an insignificant upward pressure, even before considering the substantial implications of feedback loops and iteration.

⁵² You have of course booked an unrealized gain already, so you are not unhappy – but there is now 'less upside' left.

above \$200 from a ‘technical analysis’ perspective, but from a valuation perspective the price rise has done nothing to impact valuation⁵³. It has simply moved closer to the static price target.

Money and currencies though are different, and this is largely why the MoM have seen to it that the prices of gold and silver have been kept artificially kept low. When people see that one form of *money* is rising in value relatively to another – they may interpret it as meaning that the latter form of money is *losing value*.⁵⁴ The very perception that a money is losing value *tends to spur people to move further away from the losing currency, and into the winning currency – particularly as the transition becomes one that points leads to a new economic model*. This is particularly true when the losing form of money is backed by nothing other than ‘faith’ – as is the case with all Fiat.

Furthermore, there is nothing ‘magical’ that happens should the breadth of ownership of a stock rise drastically. Although a successful stock might soon be considered a component of ‘the Dow Jones Industrial Average’ (and perhaps get an Index driven boost) it still remains just a stock that people own. But things are different with a new form of money. Once a critical mass of participants is achieved, the ability of the money itself to satisfy the requirements of ‘moneyness’ increases enormously⁵⁵, until a threshold is breached and it *fully steps into its valuation*.

As the price of Bitcoin continues to rise, more and more people will adopt it. Some will do so with an appreciation for its end-use in displacing fiat⁵⁶, and others will just view it as a curiosity, investment vehicle, or moral statement. *The reasons for adoption matter far less than the adoption itself*. This is already happening right now, and like any virtuous cycle, it becomes stronger the further it proceeds, until it reaches ‘escape velocity’.

2) More people will own it as an investment.

Again, this is fairly obvious – but its implications are subtler. As more people have a vested *financial* interest in Bitcoin succeeding, there will be increasing amounts of public pressure to ‘let Bitcoin win’. Of course, the bulk of the opposition may still be expected to come from the MoM, but particularly as wealthy (and influential) citizens of the world increase exposure to Bitcoin, it will become increasingly difficult for the MoM to maintain their grip on power. This is even before the potential for a ‘prisoner’s dilemma’ type situation to arise which looks at participation in Bitcoin from the perspective of the Master of Money themselves.

The Master’s Dilemma

Let’s assume for a moment that you, the reader of this treatise, are a proverbial member of the Masters of Money club. Perhaps you are a central bank president, or simply a (relatively) direct beneficiary of their largess. If this were the case, you might find yourself grappling with a dilemma – entirely divorced from moral imperative or ‘visions of the world’, but simply focused on self-preservation.

⁵³ Theoretically, rising prices of a stock may help fundamentals inasmuch as the Company may use their now-more-valuable stock as currency to pay for prospectively value enhancing projects. This is hardly a given though and may be thought of as (once again) an ‘exception’ that proves the rule.

⁵⁴ Unlike when someone sees a stock or bond rise in value. When that happens, they don’t think that the underlying currency it is priced in has depreciated!

⁵⁵ Particularly as a medium-of-exchange. Furthermore, although price-stability was excluded from our ‘moneyness’ definitions, we would see this express itself as more goods are *priced* in Bitcoin, causing Fiat to finally bear the burden of its own volatility.

⁵⁶ Which I hope is a camp of which readers of this treatise will consider themselves a member.

You might like to maintain the status quo. After all, the status quo has you firmly embedded in control of the wealth (and power) of nations. But unfortunately, you cannot deny that ‘cracks’ have begun to show⁵⁷. There is a non-zero probability that all this ‘Bitcoin stuff’ might *actually undermine* the current system. If that happens, what will happen to you and your wealth?

You might want to begin secretly making preparations – taking out an insurance policy of your own. Perhaps you decide to secretly (without telling any of the other MoMs) begin doing the unspeakable – buying Bitcoin.

This is a tricky business though. Since you have enormous Fiat wealth to begin with, in order to purchase enough Bitcoin to make a difference to *your* portfolio, you’d have to accumulate a *significant amount* of (current) dollars’ worth of Bitcoin. But we’ve just explored how any large purchases would push the price up – not only facilitating the success of Bitcoin itself but keeping you from buying *as much as you would like* at lower prices. As such, you might try different strategies. For starters, you might do your best to send signals to the marketplace to keep the price down long enough for you to buy it in the volumes you desire.

Perhaps you publicly deride it as a Ponzi scheme or fraud. Perhaps you take steps to outlaw it (of course knowing that any victories in this direction will be Pyrrhic – particularly with the presence of privacy enabled Cryptos like Monero). You do anything you can to keep the price down while you accumulate as much as you can. Of course you tell no one outside your inner-*inner*-circle. Any other MoMs not in-on-it with you must not know you are doing this, lest they accuse you of breaking ranks and being a traitor.

But there’s a catch.

You suspect that other MoMs might be secretly doing the same thing! They might have had the same idea as you! And any Bitcoins *they* secretly acquire to maintain their wealth in the new economic order are Bitcoins that *you* haven’t successfully purchased. It’s a competition that no one will admit to it! Or will they?

You know that after a while, it will become increasingly difficult to keep acquiring Bitcoin without the price rising dramatically. Once that happens, you may not be able to purchase meaningful amounts to cement you in ‘the lifestyle to which you’ve grown accustomed’. As such, perhaps you should be bold. Perhaps you should *aggressively start buying Bitcoin now – price rise be damned*. If you are the *first* MoM to do this, then this could still work out for you. Who cares if you have to pay \$10,000 per Bitcoin if the price will ultimately be over 100 times higher than that?

While you suspect your MoM brethren have buying programs in place, you will out-do them with your aggressiveness. Every time they bid higher for Bitcoin, you will bid higher yet. You will see to it that *you* are at the head of the pack of the MoM. Perhaps they will find out what you are doing – but even if so, it will be too late. You will have amassed perhaps the last great Fiat-fuelled fortune, and your other MoM brethren will be also-rans as the window to accumulate at entry-levels will have closed.

But no – this is a bad idea. After all, you would be acting selfishly, and without consideration for the other MoMs. You cannot bring yourself to do it. But you have a lingering question. Could any of *the rest of them* bring themselves to do it? If just *one* of the other Masters of Money breaks ranks and

⁵⁷ Calling the systemic problems ‘cracks showing’ is truly making a molehill out of a mountain.

goes on a Bitcoin binge, then *you* will be left out, and perhaps quite quickly. Perhaps you *should* try and 'beat them to the punch'?

A conundrum indeed.

Chapter 10: Concluding Messages

I do not know what the impact or durability of this treatise will be. Perhaps a handful of people will read the first few pages and no more. Alternatively, perhaps enough people stick with my (admittedly verbose) writing style long enough to reach this part. If they do – if *you* do - I thank you.

To the Masters of Money

It is stating the obvious to say that the rules of the game have been altered. The arcane laws governing action and reaction, which up until this point obediently bent to your will, appear to be deserting you. Part of you knows this, as things that 'used to work' now flail in disappointment and morass. Every day may be the birth of a new scheme, a new patch, a new grand plan to salvage the kingdom – but these are all false hopes and all lead back to failure. The genie's lamp has become the monkey's paw⁵⁸. But this is the lot of us all – not just you. Perhaps you feel it most keenly though as you seemingly have 'the furthest to fall'. In truth, you have a new world to gain.

Money has an enormous ability to sedate and control the inner stirrings that 'something is amiss', but it lacks the ability to forever repress and suppress them. Some part of even the wealthiest members of society knows that there is an *anesthetizing quality* to money – especially in great quantities. With enough of it – too much of it – the endless subtle beauties of (what might otherwise be derided as mundane) every-day living remain invisible. Perhaps this is what scripture speaks of with regard to 'rich men', 'camels' and 'eyes of needles'.

The masses are waking up, and there is nothing you can do to prevent it. *You* are waking up, and there is likewise nothing to be done to prevent it. You may attempt to fight this transformation, but doing so is akin to attacking reflections in a house of mirrors. You would shatter glass fighting a phantom of yourself - causing painful, if not mortal lacerations for yourself and those around you. Instead, you may choose to acknowledge the opportunity - and so discover that true victory lies not in conquest, but abdication.

You are not being asked to relinquish your wealth.

You control assets (away from the fiat money which is being displaced) sufficient to keep you and your kin materially kept for generations to come. What you are being asked to relinquish is the notion of control.

There are indeed stewards of humanity all about us, and perhaps you or your progenitors were at some point earnest in the assumption of that responsibility - but that stewardship has long since been corrupted. It has been co-opted by a presence that seeks to corral and control, not in the best interests of those who need assistance but in order to fuel the passions and shortcomings of those who seek to be master. The time has come to move beyond control, and into the unknown – to realize that our resistance is the very thing keeping us from being reborn into life – a life we perhaps cannot yet comprehend, save for vague notions of awe shrouded in trepidation of the hidden being slowly revealed.

⁵⁸ "The Monkey's Paw", by W.W. Jacobs is a short story I highly recommend. I seem to recall a Halloween episode of 'The Simpsons' doing a parody of it.

You are being asked to either participate or stand-aside. Through any other doorway of expression lies madness. You, perhaps in ways befitting a true ‘Master of Money’, have the means to facilitate the evolution of our world. While few will sing your praises for doing so, and indeed, some may malign the role you have heretofore played, there will be another group. These others will see you not for what you were, but for what you allowed yourself to become.

To Everyone

We find ourselves now is on the edge of unfathomable possibility – where we take real and impactful steps toward facilitating ourselves, and thus our world, back to its natural state of balance. For some concrete examples, I encourage everyone to consider the ‘Practical Steps’ for action (previous section). However, we must also realize that our new economic world will not be a utopia. Such notions do not exist, except perhaps within our own individual ability to remain open to life and consciously respond.

There is, and will be much work to be done to restore balance to our collective humanity. Many of the ‘bad characters’ who until now have used their enormous wealth and influence for nefarious purposes will *still* have enormous wealth and unchanged inclinations. Many of the ‘good characters’ of today may disappoint or become corrupted. This is alright. The purpose of shifting to a fixed-supply money system is not to re-distribute all wealth according to a particular social or political philosophy. Nor is it to enforce mental, moral and spiritual acquiescence in those who remain steadfast in disagreement. Individual liberty to express oneself must be respected in all – *especially* if it results in topics being considered that make us uncomfortable. Let us not seek to squelch dissent, but instead allow it to facilitate our awareness such that we are no longer lose ourselves in reactionary inclinations.

Epilogue

Privacy, Backups and Mr. Miyagi

As alluded to in the introduction, there are many instances and use cases in which Alt-coins (that is, cryptocurrencies away from Bitcoin) offer significant value. There are and will be many niches in the Bitcoin ecosystem which may be best served by coins with different twists, flavors and functions. While I will not explore most of those that I currently envision here, I will address one need (and a related Altcoin) which I feel is critical to the evolution of Bitcoin itself. Ironically, it is not this coin’s adoption, but the *threat of its adoption* that offers critical support to Bitcoin.

We’ve already established that since global adoption of Bitcoin (as a replacement to fiat currency) is a threat to existing power structures, there will likely be calls by those at risk to simply *ban Bitcoin*. These calls have already begun, and may yet grow stronger. As such, having an alternative Cryptocurrency, immune to controls and clampdowns, is critical to keep such actions in check.

In its current version, Bitcoin lacks the anonymity that was initially advertised by its early proponents. Governments (and others) have already made advances in deciphering the Bitcoin blockchain such that transfers may be tracked and potentially tied to the real-world people who are involved in the transactions. As such, if Bitcoin were to ever be strictly outlawed, law-enforcement agencies might have a means to pursue and punish violators. Whether that would actually *happen* is a different story. After all, doing so would truly lay out in the open for all to see that the public is *not* free from the yoke of their money masters. As such, it could incite a public backlash strong enough

to more deeply undermine the very authority which the Masters of Money would be trying to protect. Regardless of how it actually plays out though, it is likely to cause turbulence and conflict – and as such it is best avoided if possible. But how?

In the (original) ‘Karate Kid’ movie (from the 1980’s) Mr. Miyagi teaches his student Daniel the *real reason* to learn martial arts. With a little help from the internet, I offer the relevant dialogue to you here.

Miyagi: Miyagi hate fighting.

Daniel: Yeah, but you like karate.

Miyagi: So?

Daniel: So, karate's fighting. You train to fight.

Miyagi: That what you think?

Daniel: [pondering] No.

Miyagi: Then why train?

Daniel: [thinks] So I won't have to fight.

Miyagi: [laughs] Miyagi have hope for you.

Daniel learned that true power is wielded in order to maintain peace and balance. The same applies for Bitcoin and cryptocurrencies, and is why having *a backup coin* is critically important. If governments see that a mechanism exists for the ‘outlawing’ of Bitcoin to fail, then it becomes increasingly unlikely that they would bother to try and do so. This is not to say that they *still wouldn't try*, but doing so would be all the more clearly unproductive, and as such the logic of *not trying to ban it* may yet prevail.

History has shown time and again that when the government tries to ban something for which there is genuine public demand, all that they wind up doing is driving its use ‘underground’ and into the black market. While enforcement actions may still be attempted, so long as there is a mechanism for the black market economy to function, *it will*. As such, all the governments will have accomplished is a demonstration that they do not respect the will of the people, which will breed further antagonism and dissent. While attempts may be made to convince the public that the banned items are *evil* or *bad*, this is unlikely to be successful. First of all, as people increasingly understand the mechanics of the monetary system they will see through the propaganda and realize the true merits to Bitcoin. Secondly though, to think that people will *stop using something they like*, just because they are told it is bad for them is to ignore observable human behavior.

While a ban might curtail actual Bitcoin use, all that would happen is the mantle of ‘the people’s money’ will be handed from Bitcoin to an Altcoin that wields the privacy features necessary to keep it immune from government tracking or snooping. I believe that the coin Monero is currently the best candidate.

Monero Valuation

I won’t go into great detail here of why I favor Monero as a ‘Bitcoin Backup’, particularly over other altcoins which also offer privacy features. This is, after all, a treatise on Bitcoin with what I felt to be

a necessary addendum addressing privacy. Suffice it to say that in my view Monero has the most favorable combination of privacy features, adoption and ethos to be the best candidate. If this is insufficient for you, then by all means feel free to apply the methodology I use to any alternative privacy enabled coins. Considering the upside potential, even if you were to split the total valuation between the top 'contenders', the ultimate 'success' valuation for *each* would still be hundreds of times (or more) above current prices.

Let's assume that governments cannot help themselves, and despite knowing that it will in many ways be unsuccessful, they *still* announce a ban on Bitcoin and all Cryptocurrencies. As such we anticipate two things for our valuation:

- 1) Monero becomes the primary 'bearer of the torch' of fixed supply money⁵⁹

This means that we will attribute some portion of global M3 to Monero allocation, similar to what we did with Bitcoin.

- 2) Governments have some success in keeping Monero's use from becoming as widespread as a 'Bitcoin Success' scenario.

In a 'crackdown' scenario, any investment in Monero would likely be outlawed, and despite enforcement of such a ban being difficult if not impossible (due to its innate privacy features), the prospect of prosecution would likely keep some people away from it. As such let's assume that Monero achieves only a 5% penetration rate in *its* success scenario (one where Bitcoin is outlawed).

If we stick to our 10-year horizon then all that remains to perform our analysis is a probability estimate of a global government 'crackdown' on Bitcoin. Let's assume this scenario at 1%, and now we can do the math.

5% of an M3 sized at \$80 trillion is \$4 trillion. This would be distributed over (let's say) a future Monero coin supply of 20 million⁶⁰. This means that each coin would be worth \$200,000 a coin. At a current price per coin of less than \$100, this translates into an investment return (started today) of over 2,000x – or more than 5x greater than even our Bitcoin scenario.

If we now probability weight it (at 1%) we have a future expected value per coin of \$2,000, and an expected return (that is, probability weighted and present valued) of 35%. Again, this does not represent our return in a success scenario (that would be the 2,000x+ appreciation), merely the implied discount rate which by virtue of the fact that it is higher than the risk-free-rate indicates current prices are undervalued. To find today's 'fair value' we apply the same formula as we did with Bitcoin – discounting our future 'expected value' of \$2,000 at the 10-year risk-free-rate, or 2.5%. This yields = $20,000 / (1.025^{10})$ or \$1,562 – nearly 16 times current levels.

But there's more. This analysis ignores the prospect that in a 'Bitcoin success' scenario (one in which it has not been banned, outlawed or otherwise stifled) there will *still* be demand for strictly private money transactions. Whether it's due to black market transactions, or simply people not wanting their activities to be part of the public record, demand for Monero will persist at some level.

⁵⁹ There is some calculated inflation in Monero, but the mechanisms differ drastically enough from the inflation in our current monetary system as to be looked past here.

⁶⁰ The calculation for future Monero coins is a bit more complicated than that for Bitcoin. The actual number within ten years will be less than 20 million, but for simplicity we have made this overly conservative assumption.

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I leave it to the reader to come up with probability and penetration assumptions for this scenario, with the recognition that any probability-weighted present value arrived at in this way would be *in addition to* the valuation we performed above (as the scenarios are mutually exclusive). In short, there appear to be multiple ways that Monero could perform quite well from an investment perspective. Furthermore, as one of the most resistant altcoins to 'crackdown' due to its innate privacy features, is likely to persist in some form regardless of how political and legal environments develop.