HOW BITCOIN POWERS CULTURES, CORPORATIONS, AND COUNTRIES IN THE 21ST CENTURY

The Treasury *of* Michael Saylor

ANIL PATEL

"Michael Saylor is a true visionary. He could see what was coming before so many of us."
—U.S. SENATOR CYNTHIA LUMMIS

The Treasury of Michael Saylor

HOW BITCOIN POWERS CULTURES, CORPORATIONS,
AND COUNTRIES IN THE 21ST CENTURY

ANIL PATEL

ISBN 979-8-89170-521-0 Hardcover

979-8-89170-522-7 Paperback

979-8-89170-523-4 Ebook

treasury *noun*

trea·sury

A repository of valuable things.

Michael is a true visionary. He could see what was coming before so many of us.
—CYNTHIA LUMMIS, U.S. Senator from Wyoming and Chair of the Senate Banking Subcommittee on Digital Assets

There's no one better than Anil to decode the brilliance of Michael Saylor and make it click for the world.
—PRESTON PYSH, Co-founder of The Investor's Podcast Network and GP at Ego Death Capital

Michael Saylor is the Warren Buffett of the digital age. He saw the Bitcoin opportunity before the world caught up and then had the conviction to bet big and execute at a level few can match.
—DAVID BAILEY, CEO at BTC Inc. and Founder & CEO at Nakamoto

Anil has crafted a concise and insightful guide that feels like a cheat sheet on the flaws of the fiat system. As always, the visuals are fantastic.
—HRH PRINCE FILIP OF SERBIA, Chief Strategy Officer at JAN3

A great job by Anil. Michael is a brilliant mind. His constant teachings and actions have blazed new trails for many of us to follow.
—RICARDO SALINAS PLIEGO, Founder & Chairman of Grupo Salinas

Like Archimedes, Michael Saylor had a world-changing "Eureka" moment: Raising money via traditional capital markets to buy Perfect Money. Bitcoin alchemically turns dilution into accretion.
—MAX KEISER, Co-founder of the National Bitcoin Office of El Salvador

Michael Saylor is pioneering the digital transformation of capital markets, with a 4-year head start in the largest and most important land grab in history. Bitcoin fixed the money; Strategy is on a crusade to fix the capital markets.
—JEFF WALTON, VP of Bitcoin Strategy at Strive Asset Management and Founder of True North Podcast

No one thinks as fast or gives as freely as Michael Saylor. His courage to challenge outdated systems—and his willingness to share every lesson he learns—gives the rest of us real hope and a clear path to financial

empowerment.
—NATALIE BRUNELL, Author of *Bitcoin is for Everyone*, Host of Coin Stories Podcast

This book offers a masterclass in financial engineering during an era in which the world's capital is being upgraded to Bitcoin.
—LAWRENCE LEPARD, Author of *The Big Print*

Saylor's genius is undeniable, but it's Anil Patel's thoughtful curation that makes these profound ideas on energy, money, and Bitcoin truly accessible. This isn't just a collection of quotes; it's the essential roadmap to understanding the future of sound money.
—VIJAY BOYAPATI, Author of *The Bullish Case for Bitcoin*

The Treasury of Michael Saylor

Editor's Note

I've spent over 5,000 hours creating and curating educational Bitcoin content to date. This has spawned a reference book (*The Bitcoin Handbook*), hundreds of infographics, and several conference presentations. Over the past few years, I realized an increasing share of wisdom was emanating from one mind: Michael J. Saylor.

This book is a compilation of transcripts from Saylor's presentations, speeches, and interviews. It will feel familiar to readers of *The Almanack of Naval Ravikant* (2020) by Eric Jorgenson. As you digest this book, you'll see that Michael Saylor is a true polymath. He seamlessly moves between fields, drawing from his vast mental library to distill concepts and historical events into lessons and analogies that anyone can understand. Nowhere has this been more apparent than in his explanations of Bitcoin as a network, a capital asset, an engineering marvel, and a paradigm shift. Saylor's actions also align with his words—MicroStrategy (since rebranded as Strategy) was the first public company to adopt a Bitcoin standard in 2020 and remains the single largest corporate holder of Bitcoin as of July 2025. I assumed someone would have already compiled Saylor's teachings into a book, but my search turned up empty. The exceptions are a transcription of conversations with Robert Breedlove, *What is Money?: The Saylor Series* (2022), and Saylor's self-authored book *The Mobile Wave: How Mobile Intelligence Will Change Everything* (2012).

> *"I wrote the books I should have liked to read. That's always been my reason for writing. People won't write the books I want, so I have to do it for myself."*
>
> —C. S. LEWIS

The content in this book has been **lightly edited** for clarity and flow. Thus, I will undoubtedly have misconstrued statements or omitted crucial context (despite my best efforts). Additionally, a single paragraph of text will often contain material from multiple sources. Readers are therefore encouraged to

consult the source material, listed at the back of this book and organized by chapter, should confusion arise. And finally, this book contains two forewords from people with vastly different perspectives—both of whom I deeply respect—that demonstrate the broad impact Michael Saylor is having.

Sen. Cynthia Lummis

The collision between Bitcoin and politics was inevitable, but individual efforts determine the outcome. Cynthia Lummis has been an advocate of Bitcoin long before it became politically palatable or was recognized as a legitimate asset by large financial institutions. As a sitting U.S. Senator (R-WY), a former state treasurer (WY), and self-proclaimed Bitcoiner, she possesses a deep understanding of the role of durable assets in the pursuit of long-term financial stability and wealth preservation, be it for an individual, a state, or a nation.

Preston Pysh

Draw a Venn diagram consisting of three circles—engineering, finance, and Bitcoin. Who would you place at the center? In my opinion, two names rightly come to mind: one is the subject of this book, and the other is Preston Pysh. Preston's extraordinary talent lies in knowing which questions to ask that will uncover the greatest insight (for both himself and his audience). He is the very definition of a first-principles thinker.

*Aside from providing initial consent and final manuscript approval, Michael Saylor was not involved in the content selection or editing process.

Now, grab a highlighter (you're going to need it).

Foreword by Cynthia Lummis

U.S. Senator and Chair of the Senate Banking Subcommittee on Digital Assets

Few people have had as transformative an influence on our digital economy as Michael Saylor. He has rewritten the playbook on corporate finance and gone on to become Bitcoin's most eloquent evangelist. His commitment to teaching the world about the power of Bitcoin has reshaped how institutions, governments, and entire nations perceive digital assets.

Saylor's influence extends far beyond corporate boardrooms; thanks to his leadership and tireless advocacy, he has played a pivotal role in helping to educate Members of Congress.

The speeches in this collection chronicle Saylor's remarkable journey and unwavering commitment to promoting the financial freedom that Bitcoin provides. They reveal his unique ability to frame Bitcoin not as mere speculation, but as essential infrastructure for America's financial sovereignty in an increasingly digital world.

Through these addresses, readers witness the evolution of a movement that Saylor helped orchestrate: the transformation of Bitcoin into a cornerstone of American economic strategy.

Foreword by Preston Pysh

Co-founder of The Investor's Podcast Network and GP at Ego Death Capital

There's something wonderfully absurd about the Industrial Revolution nearly collapsing under its own ambition—mostly because no one could figure out how to keep the machines from exploding.

By the mid-1700s, steam engines were the darlings of British industry: brutish, coal-guzzling beasts pumping water from mines, powering textile looms, and feeding humanity's hunger for progress. But they had a fatal flaw—no brakes. Pressure built relentlessly, with nowhere to vent. Ungoverned, these engines self-destructed: blowing gaskets, snapping rods, or hurling shrapnel like cannon fire.

Humanity had unlocked what felt like infinite torque… but without a steering wheel.

Enter James Watt, the quiet Scottish engineer who loathed inefficiency more than he craved glory. He didn't invent the steam engine; he reinvented its soul. His unsung masterpiece? Not a piston or boiler, but a whimsical gadget: two iron spheres on spinning arms, flaring outward like a dancer's skirt.

The flyball governor changed everything.

Here's the elegance: as the engine accelerated, centrifugal force lifted the balls, tugging a lever to throttle steam flow and ease the pace. If it lagged, gravity dropped them, reopening the valve. The machine began to self-regulate—adapting in real time to loads, heat, and most importantly, the ever-changing environmental demand being placed on it.

Brute force yielded to controlled rhythm. Energy became tunable and trustworthy. Historians hail Watt as a father of the Industrial Revolution, but

the real spark wasn't steam's power—it was being able to control it without incident.

The brilliance lay not in the fire, but in the engineering of the feedback loop.

And if all of this sounds oddly modern—like the kind of system that adapts, learns, and self-corrects under duress—that's no accident. You're about to meet its monetary heir.

Only now, the pressure isn't steam.

It's a corrupted fiat currency entropy.

Watt's industrialists learned fast: raw energy without guidance is dangerous. His governor didn't stifle speed—it made acceleration possible, forward motion enduring, and volatility productive.

Fast forward 250 years, and we're facing a new runaway engine—not measured in PSI, but in basis points.

Our global financial system runs scorching hot and chaotic: surging on synthetic cheap debt and seizing when rates spike or liquidity evaporates. Central banks grip the throttle, fiat floods as fuel into the global economy, and the machine overheats or stalls without warning.

The problem today isn't a lack of highly manipulated energy units.

It's in excess—trillions sloshing through yield-desperate markets, building pressure until it severely leaks... or detonates.

Yet one visionary isn't fleeing the chaos—he's harnessing it.

Where others dread inflation, volatility, and rate shocks, Michael Saylor treats them as fuel: inputs to measure, torque to channel. He's engineered a machine that doesn't battle instability—it thrives on it.

He converts monetary entropy into the rarest asset on Earth, Bitcoin, amassed at scale, and the intent to hold forever.

It's tempting to call this a "Bitcoin treasury." That's like calling Watt's invention a "kettle with manners." True, but trivial.

Because what Saylor has built is more than a flywheel. It's a regulated, multi-gear transmission, precision-tuned to yield curves, credit cycles, and currency debasement—one that not only endures but compounds.

At the core is a flywheel—a capital engine with three interlocking gears:

> **Equity issuance**: Selling common and preferred stock into public markets eager for Bitcoin exposure, often at significant premiums to NAV (net asset value per share of BTC held). **Capital deployment**: Deploying those proceeds directly into Bitcoin, increasing BTC-per-share on the balance sheet. **Market premium**: As Bitcoin rises (or holds firm) due to the nature of the fractional-reserving fiat banking scheme, the common stock's premium swells, enabling additional capital raises with minimal dilution relative to Bitcoin's growth rate.

This loop—raise, acquire, amplify—spins continuously. But its genius lies in its dynamic nature. Because when the environment changes, so does the transmission he's built around the flywheel.

In exuberant bull markets with cheap capital, Saylor favors common equity —tapping NAV premiums through at-the-market (ATM) offerings. In late 2024 alone, Strategy raised over $2 billion, acquiring more than 27,000 BTC.

When precision is key—in choppier conditions or transitional phases— he's used convertible debt: low-interest, long-dated notes with optional conversion features that align future equity issuance with higher BTC levels.

But here's where it gets interesting. Saylor doesn't just issue these instruments—he studies how the market games them.

He's wary of the Wall Street arbitrage that comes with convertibles: delta hedging, shorting the common stock around key strike prices, and volatility

suppression. So he quickly adapted the gears and shifted away from that playbook.

Instead, he's leaning into a more elegant mechanism: perpetual preferred stock—and most notably, the STRC series just launched in July 2025.

That $2.5 billion offering isn't just another gear. It's an automatic transmission.

With a variable monthly dividend that can adjust to market conditions, STRC keeps itself perpetually attractive to yield-seeking capital—rising when needed, falling when strategic. This structure allows Strategy to raise fiat cash continuously, without the friction of repeated roadshows or one-shot IPOs. This is just one gear in his thoughtful transmission.

Each tool is a gear.

Each condition cues a shift.

And all of it drives toward one outcome: Bitcoin accumulation without surrender.

This isn't treasury optimization.

It's monetary engineering at the edge of thermodynamics.

By treating Bitcoin volatility as the primary energy and fiat capital markets as the terrain, Saylor's machine advances through any macro environment —bull or bear, inflation or deflation, hikes or credit crunch.

It issues equity when markets are greedy.

Preferreds when yield beckons.

And it waits, silently, when conditions demand patience.

It doesn't inflate—it refines.

It extracts fiat chaos without dependence.

It yields without overpromising.

It holds Bitcoin not as a bet, but as a monetary truth.

And perhaps most importantly: It can be copied.

That's why this book matters. Saylor didn't hoard his blueprint—he open-sourced a revolution.

But decoding the gears, levers, and language of this engine requires a translator. A systems thinker who can see both the math and the magic.

Enter Anil Patel.

With his uncanny gift for distilling complexity into clarity—and his visual storytelling that renders abstract systems *buildable*—Anil doesn't merely explain what Michael has built. He reveals it. He makes the invisible machine tangible.

This isn't just a book. It's a schematic—a field manual for tomorrow's monetary engine, voiced by its inventor and illuminated by its ideal interpreter.

So dive in.

Grasp how the financial machine hums.

And if you're attuned—maybe, just maybe—you'll even build your own.

Timeline of Michael Saylor

1965: Born in Lincoln, Nebraska, on February 4.

1976 (Age 11): The Saylor family settles in Fairborn, Ohio, near Wright-Patterson Air Force Base.

1983 (Age 18): Graduates from Fairborn High School as valedictorian and class marshal.

1983–1987 (Ages 18–22): Attends MIT, studying aeronautics and astronautics alongside science, technology, and society. He plays guitar in a rock band, learns to fly gliders, and completes flight officer training at Lackland Air Force Base, earning a commission as a second lieutenant.

1987 (Age 22): Graduates with highest honors from MIT with dual degrees in Aerospace Engineering & History of Science.

1987–1989 (Ages 22–24): Works as a consultant, first at The Federal Group, Inc., building computer simulations, then at DuPont, developing models to predict market trends. His simulations accurately forecast a 1990 recession.

1989 (Age 24): Founds MicroStrategy with MIT classmate Sanju Bansal. The company initially focuses on data mining and business intelligence software.

1992 (Age 27): MicroStrategy secures a $10 million contract with McDonald's Corp to analyze the effectiveness of promotional campaigns.

1998 (Age 33): MicroStrategy goes public on the Nasdaq via IPO (ticker: MSTR).

1999 (Age 34): Saylor establishes The Saylor Foundation, whose vision is to offer free education through an "Internet cyberuniversity."

2000 (Age 35): The Dot-com bubble bursts. MicroStrategy's stock declines 95% between March and May, bottoming in July 2002. Saylor is named one of 'America's 100 Most Eligible Bachelors' by People Magazine.

2008 (Age 43): The Saylor Foundation becomes Saylor Academy: a nonprofit offering free and open online courses for college credit or professional development.

2012 (Age 47): Saylor publishes *The Mobile Wave: How Mobile Intelligence Will Change Everything*.

2020 (Age 55): MicroStrategy makes first Bitcoin purchase of 21,454 BTC for $250 million at an average price of $11,653 per Bitcoin. Saylor announces personal Bitcoin holdings of 17,732 BTC at an average price of $9,882 per Bitcoin (informing the company of his holdings prior to their decision).

2022 (Age 57): Saylor transitions from CEO to Executive Chairman, focusing on Bitcoin strategy and advocacy. Phong Le, the company's president, becomes CEO to manage day-to-day operations.

2024 (Age 59): MicroStrategy is added to the Nasdaq-100 Index, leading to inclusion in the Invesco QQQ Trust ETF (QQQ).

2025 (Age 60): MicroStrategy rebrands to 'Strategy', reflecting its focus on Bitcoin and AI. The company adopts a new logo with a stylized "B" and orange as its primary color.


MicroStrategy®

Founding Strategy

I grew up in an Air Force family and lived on military bases my entire childhood. At age 18, I attended MIT on an Air Force scholarship and earned a degree in astronautical engineering, studying spaceship design. I became fascinated with how new technologies are introduced. I was looking at the impact of things like radiation on cancer treatments, railroads on cultures, and Maxwell's equations on communication. While there, I got another degree in the history of science, exploring the structure of scientific revolutions and paradigm shifts.

I learned to fly in the Air Force but never went on active duty. Just as I was about to graduate, the Cold War came to an end. One day, my commanding officer walked into the room and said, "We paid for your education. You're on the hook for five years of active duty, but you'll wait two years before you get called up. If you want to join the Air Force Reserve, you can do that instead." The choice would be to get paid three times as much in the civilian world by serving in the Air Force Reserve or waiting. I wanted to be a fighter pilot, but was mistakenly diagnosed with a benign heart murmur in my final semester, which disqualified me from flying combat jets. So, I joined the Air Force Reserve and unexpectedly became a civilian.

In high school, I wanted to be a rock star. But that dream was dashed. In college, I wanted to be a fighter pilot, but those hopes were dashed. In college, I wanted to become a professor. I got into a PhD program in the final month of my undergraduate career, but I had no money. So I decided to work for one year and apply for a fellowship before returning to get that PhD. Six months in, the company I was working for blew up. I ended up at DuPont, building computer simulations, one of which was being used to justify a $1.5 billion capital investment in the petrochemical industry. After 18 months, I tendered my resignation to return to MIT. But the executive who wanted the project must've said to his staffers, "Tell the kid we need him to finish the job."

I was living in an apartment with milk crates as bookshelves and spending $700 per month. I knew I didn't want to become a corporate bureaucrat. So

I said, “I’m not staying.” They asked if I wanted a raise. I said, “No.” There was only one last thing on my checklist: to be CEO of my own company. So, I told them, “If you want me to stay, let me start my own company.”

I asked for a quarter of a million dollars in cash. They claimed they couldn’t give a 24-year-old that kind of money upfront. So I used the negotiating strategy that only works once in your lifetime. I said, “You have to give me the money because *I have no money*.”

They went back to their boss and ended up doing a deal that you would never do, all because their boss was weeks away from receiving a billion-dollar check from some mega-corporation, and I was the only guy on the East Coast who could make their computer program work. They gave me the money and I thought, “Holy crap, I have $250,000! This is enough capital to last me seven years.” They also gave me $2.5 million in contracts, let me hire ten people from DuPont, and provided free office space and computer equipment for the first few years.

I started Strategy at 24, thinking I’d return to college when it failed. But, it never did. In the first year (1989), we were valued at $5 million, soon doubling to $10 million, then $20 million, $40 million, and then $80 million. Around 1996-97, the Dot-com revolution was in full swing. Everybody was clamoring, “You’ve got to go public!” So we finally did in 1998. I got on the roller coaster, and then there was no going back. I kind of fell off the turnip truck and hit my head on a pot of gold.

The irony is, I still haven’t gotten that PhD. I’m just a silly MIT undergraduate!

Image credit: LaDoger

PART ONE

ENERGY

Lessons from Standard Oil: Liquid Energy

How did John D. Rockefeller become the richest man in the world?

First, he started with a commodity that is dense in energy: crude oil. Next, he developed a method to refine crude oil into standardized products, unlocking its potential energy.

This was a major breakthrough. Before Rockefeller, people climbed into wooden ships to hunt whales for their blubber, which they used to produce kerosene for lamps. Then along came a new form of energy—oil—that was 1,000 times more efficient.

Have you ever tried sailing a boat across the ocean? Imagine Rockefeller showing up and saying, "I have this drum of diesel that can power a motor. You don't need sails anymore, and you'll go three times as fast." It wouldn't be a hard sell! His company would be named Standard Oil.

Standard Oil refined, stored, and distributed liquid energy to the world. The company acquired refineries to process it, along with tanker ships and railcars to store and transport it. They even built a retail distribution network, giving away furnaces for free just to sell the oil. This created the first serious energy network, and it was so powerful that less than 100 years after Rockefeller's death, oil companies are collectively worth trillions of dollars.

Standard Oil: Commercializing Liquid Energy

> *"People have accused us of many things, but they cannot say we did not give them oil at a price lower than they ever dreamed possible."*
>
> —JOHN D. ROCKEFELLER (*Random Reminiscences of Men and Events*)

People often don't interpret the name "Standard Oil" literally, but they should. It represented a uniform quality of liquid energy that was reliable: it wouldn't gum up your engine or explode in your face. This energy source was powerful enough to help the United States win both World Wars and tilt the course of Western civilization. Many victories throughout history can be traced back to superior energy systems.

How did Rockefeller build Standard Oil? He raised as much money and acquired as many assets as he could. Then, he cleaned up the industry and standardized everything. It wasn't merely an investment strategy—it was something much deeper. Rockefeller commercialized liquid energy and remained relentlessly bullish on it for 40 consecutive years. Even today, his great-great-grandchildren hold stakes in those companies.

Civilizations are built upon energy systems. **If you had asked me for the best investment idea 150 years ago, I would have said "liquid energy."** It powered ships, factories, automobiles, and ultimately, the world.

The Nature of Energy

Energy is *the* universal source of life. Einstein famously noted that energy is conserved—it can neither be created nor destroyed. A fixed amount of energy exists in the universe, the solar system, and strikes the Earth at any given time.

CHANNELING ENERGY

When watching a bonfire, you're watching matter (wood) get thrown into a reaction. The wood burns, light flashes, and heat radiates. Energy transforms before your eyes from wood to charcoal.

It started with **fire**. The big idea was that there's energy in the matter, and we can extract it through combustion. That simple idea set humans apart from every other species.

Next came **water**. There's gravity all around us, and we learned how to harness it. We discovered that we can extract energy from a gravitational field. An aqueduct uses gravity to move water over land across great distances. When I dam a stream to turn a water wheel, gravitational energy is converted into mechanical energy. This is a profound improvement when you're grinding grain with animal power. This is why early civilizations (e.g., Aegean and Greek) built their cities along rivers. They were settling around gravity-powered energy networks.

Steam marked another turning point. It was the breakthrough that brought energy to factories, ships, and trains. It powered the Industrial Revolution and changed the world.

Then came **oil**, energy in liquid form that's stable at room temperature. I can store it in a barrel and combust it in an engine, turning thermal energy into mechanical energy. I can use that mechanical energy to spin a turbine and produce electrical energy.

Electricity is clean, silent energy. It permeates all of our lives. You don't see any essays on the power of electricity from the likes of Archimedes or Newton. Even though they were geniuses, they couldn't conceive of it. Now we do; it's obvious that everything has to be remade by it.

And finally, Fermi developed a controlled **nuclear** chain reaction, giving us clean, carbon-free energy.

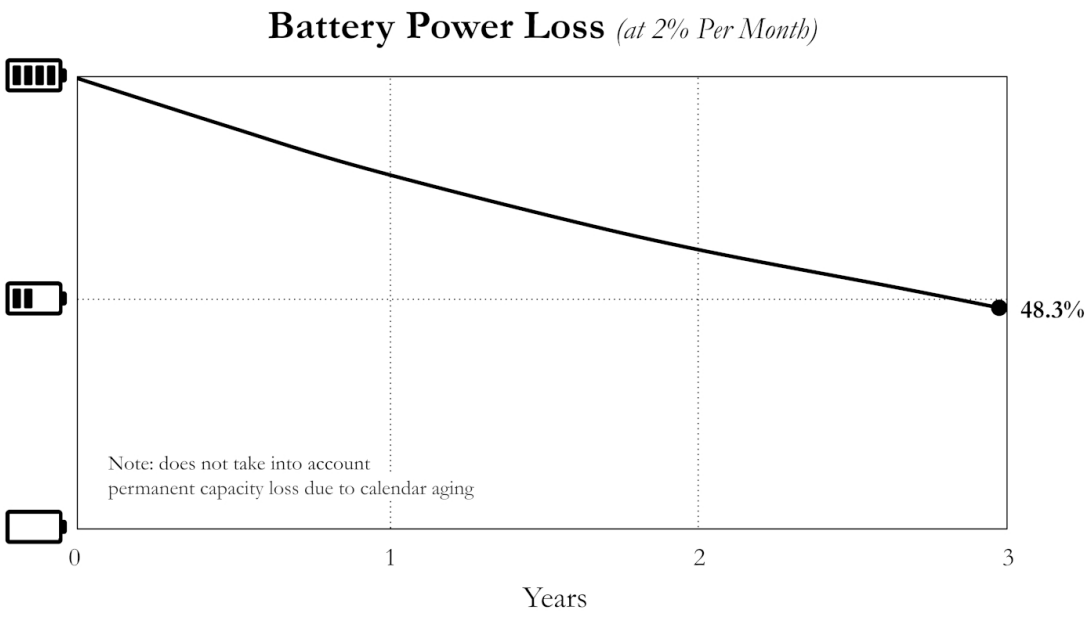
STORING AND TRANSMITTING ENERGY

The central challenge of humanity is storing and transmitting energy across time, space, and governmental domain.

Power is the rate at which energy is output or converted. A typical power grid that uses coal to generate electricity (by converting chemical energy into electrical energy) loses approximately 35% of the coal's energy during the conversion process. Once generated, the electricity is transmitted over high-voltage lines, which can carry it up to about 500 miles while losing roughly 2% of the energy. It must then be stepped down to a lower voltage for delivery to your home, resulting in a further 4% loss. If you started with pure energy at the power plant, you would lose 6% by the time it reaches your home. Finally, once the electricity reaches your home, it cannot be stored, so it must be used immediately.

But let's say you did want to store it. You're going to need a battery.

A typical modern battery (lithium-ion) loses about 2% of its energy per month, or approximately 20% annually. In three years, you've lost half the charge, and after 10 years, only about 9% remains. Our civilization depends on power grids to deliver electricity, yet they're not very effective at storing it.



ENERGY SYSTEMS

In engineering, if an energy system is constant (energy is neither entering nor leaving), we call that an *adiabatic system*. Every problem given to an engineering student will start with the phrase: “assuming an adiabatic system”, because if you allow energy to enter or leave the system, all engineering solutions are no longer valid.

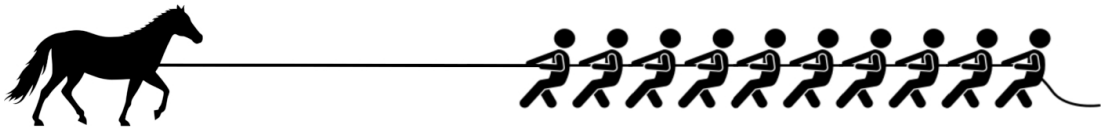
For example, say you visit Miami Beach on a clear day. The sun is shining and it’s 80°F (27°C). Everything is “normal”. You can accurately forecast the foot traffic on the beach, in restaurants, and hotels. But if I add some energy to the system, like a 50ft tidal wave, all your models are broken. None of your math, physics, or history is relevant because I have introduced excess energy into the system. Miami Beach is a very different experience during a hurricane. The opposite would be sucking the energy out of the system. What happens when the temperature gets to 30°F (-1°C) in Miami Beach? You won’t see people on the beach in bathing suits playing volleyball. You won’t see the same commercial patterns in restaurants or bars. You won’t see the same traffic patterns. All this to say: energy matters.

Often, engineers will only consider the implications of their training as it relates to machines, buildings, or other traditional engineered systems. In other words, they do not apply the mathematical and logical tools they've learned to fields such as politics, banking, war, money creation, culture, or art. Instead, they simply stay out of those domains.

FOCUSING POWER

During a one-hour workout, a typical human can exert one-tenth the power of a horse. In other words, the power of ten people is equal to the power of one horse (power being the rate of energy transferred per unit of time). This makes sense if you think about a game of tug-of-war between humans and a horse.

Horsepower



1 **10**

Why did the Europeans have an advantage when they landed in the New World versus the native tribes? The Europeans had mastered horses, but the Native Americans had not.

The soldier on horseback beats the foot soldier.

Next, consider the energy exerted in a single punch thrown by a semi-professional boxer. It will be in the range of 500 joules of energy. A handgun will also generate 500 joules of energy. But the 500 joules from the handgun are very focused behind a metallic bullet. So, the same amount of energy, concentrated in 1/100th of the space, will punch a hole right through you. Plus, the average person can fire six rounds in the same

amount of time as one punch. But the average person can't punch you six times as hard as Muhammad Ali.

The gun beats the punch.

And finally, a standard bomb is 1.87 GigaJoules (1.87 billion joules). The atomic bomb that was dropped on Hiroshima was 63 TeraJoules (63 trillion joules).

The bomb beats the gun.

You can see how the history of humanity and military complexes is determined by who can channel the most energy.

MACHINE POWER

The passage of human civilization is marked by this nonstop set of steps to find ways to gather and store more energy, followed by the construction of machines. Machines are mechanisms to channel energy in order to convert potential energy to kinetic energy or heat energy.

A small hydroelectric power plant can generate between one and 50 megawatts. The Three Gorges Dam in China is the world's largest hydroelectric power station, with a capacity to generate 22,500 megawatts (22.5 gigawatts). Today, there are extraordinarily efficient ways to generate power. The challenge is that no battery will hold the electrical power generated from a hydroelectric dam.

Nuclear power is another extraordinary way to harness energy and generate power. The problem is we haven't quite figured out the pocket nuclear reactor yet. I can have lots of energy in some places, but it's no use if I can't get it to where I need it. I may have infinite energy at the source, but how do I put it five miles up in the air into an aircraft? Using fossil fuels like diesel or gasoline provides flexibility. My Global Express[1] runs on jet fuel because that's what you take to 45,000 feet, and haul around in an airframe. It's no mean feat to channel 30 megawatts of power at that altitude!

RESISTANCE TO CHANGE

Within a military, you will find examples of rejecting the new while clinging to the old. If the Air Force is run by the pilots, they'll drag their heels. If a mission is fulfilled by someone shooting missiles remotely via a drone, they'll get the next 100 missions. It's like *Top Gun 2*—the entire movie is about a piloted mission, but you realize within the first 60 seconds, from a technologist's point of view, they should just send a drone. But, then there's no heroic moment, no need for the aircraft carrier, no need for the naval base, and no need for Top Gun. They would send one drone to shoot a single missile. End of story.

Human-centric professions and organizations don't like the story of technological change.

---

1. ↩ Long-range business jet, manufactured by Bombardier Aviation.

Lessons from Santorini: Urban Design as Sanitation

Santorini is a beautiful city, built on a caldera 500 feet above the port. You can take an elevator or you can take a donkey. When I visited Santorini, I was in my fitness craze and decided to walk. Do you know what I saw as I started walking down these steps? **A river of donkey excrement.**

You can hardly avoid it. You're hopping this way and that way. This is 21st-century Greece! They still haven't figured out how to clear it after thousands of years. So let's go back 3,000 years and do a thought experiment. What was it like to live in a city that relied on animal power to move goods?

Awful—fly-infested, typhoid-infested, and germ-infested.

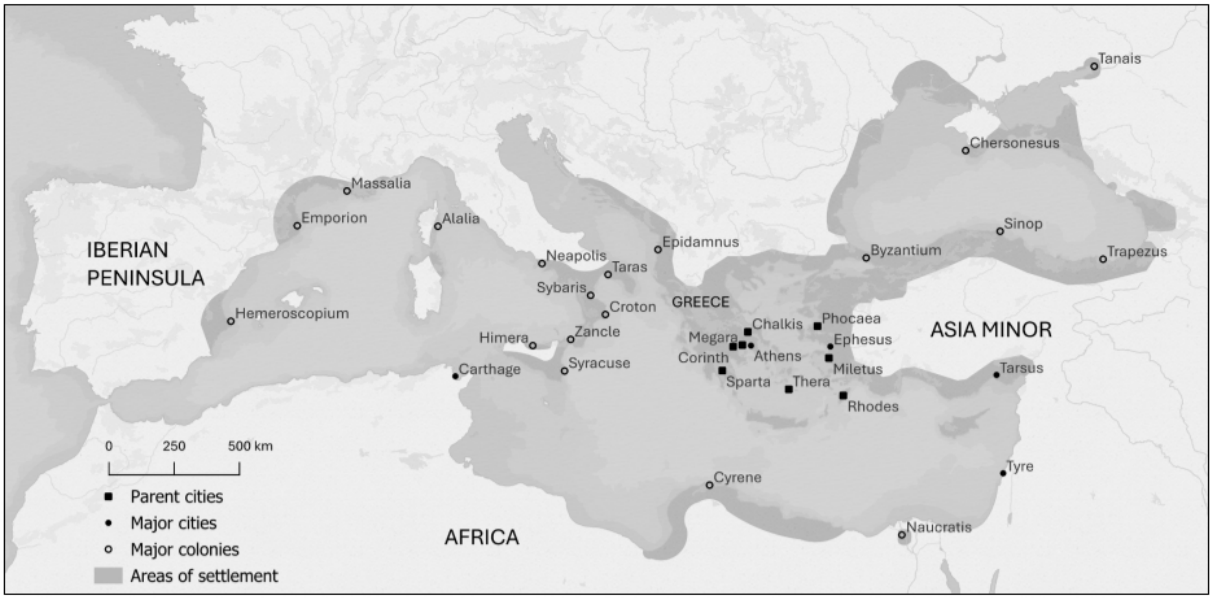
It's not as if they had hydraulic hoses; when it dries out, this stuff desiccates and blows through the air. You'll be breathing and smelling it. This is not just a matter of creature comfort—you're going to die! You can't colocate a bunch of human beings without solving the sanitation problem.

It then dawned on me why all the streets in Mykonos are so narrow: to prevent a horse from moving through them. They're walking cities. There's a reason the equestrian class in ancient Rome was comprised of nobles (the top 0.1% of society). To be rich and powerful was to have the right to bring a horse into the city.

It wasn't that the rest of society couldn't afford horses; it was that allowing anyone to bring a horse into the city would make it so unsanitary, rendering it uninhabitable. Consequently, most ancient cities had to be human-powered. This created the dilemma of how to transport goods. You need a clean energy source that won't foul the water supply and kill everyone. And the answer, of course, is a boat.

The optimal environment is to have 25 port cities situated along a calm inland sea, enjoying six to nine months of mild weather each year. This

enables safe, point-to-point crossings without the risk of shipwreck. What I've just described is the Mediterranean Sea. It's ideal for navigation: ships can often travel without losing sight of land, and with so many ports, it's hard to get lost.



The Four Ways to Concentrate Power

LOW-ENERGY VS. HIGH-ENERGY CULTURES

Cultures that effectively channel energy to exert and direct power are able to expand, flourish, and dominate others. In contrast, low-energy cultures—such as hunter-gatherer societies—often lacked advanced technologies like wheels, horses, or factories. These less powerful, less energy-efficient, and less energy-aware cultures are typically displaced, because physical security depends on military power. Without sufficient power, a group is pushed off its land. Over the past 20,000 years, thousands of tribes across Europe were squeezed out by more dominant groups like the Romans and Gauls.

While the ability to direct power is important, there are key ways a culture can *concentrate* power.

AGRICULTURE

Agriculture concentrates nutritional energy and, eventually, manpower. If you want high population density, you engage in agriculture—planting wheat and other grains. That's what the Romans did 2,000 years ago. You will find mills (used to grind grain for bread) among Roman ruins. They would have a series of water wheels harnessing hundreds of kilowatts (maybe even megawatts) of power. The Romans manufactured biscuits to feed their armies while marching, as there was no way to haul fresh meat for an army of 20,000 soldiers.

> *"This apparently trivial change in sowing, and the improvement of the plow, shared in what came to be called the agricultural*

revolution, whose effects can be measured (even allowing for inflation) by the tenfold rise, during the eighteenth century, in the value of the lands where the new methods were used."

—WILL & ARIEL DURANT (*The Age of Voltaire*)

If you study hunter-gatherer societies and the paleo diet, you realize it will support one-tenth of the population for a given amount of land. One hundred thousand years ago, when people lived off a paleo diet, they had good teeth. After agriculture was introduced into Egypt, people had rotting teeth. Why? Because they're eating too much starch, sugar, and wheat. But this diet was ten times cheaper, which gives you ten times as many people per square mile. Hence, the society that embraces agriculture and lowers its nutritional standards can field an army of 20,000 soldiers.

Hunter-gatherer type societies, whether the Aboriginal peoples in Australia, Native Americans, or the various societies in South America, couldn't channel enough energy to generate high population density. They simply weren't going to be able to create the munitions necessary and got displaced in short order. There's also the biological issue, as infectious diseases like smallpox play a role. But even if you have the same biological resistance to germs and the same weapons, there are other concentrators of power to consider.

MANUFACTURING

Manufacturing enables the projection of power via weaponry and machinery. You're converting raw materials into end products. You could have less manpower but greater overall power because you have the technical power or more powerful systems. If you have all of the ironworks and munitions factories, you probably win the war. If you don't manufacture rifles, you lose control of the land. If you don't manufacture cannons and ships, you lose control of the seas. If you don't manufacture aircraft, you lose control of airspace.

BANKING

If a primitive goldsmith sets up a bank, takes in 100 pounds of gold, and issues 100 pounds worth of gold notes, they've concentrated power in their facility. However, a society that invents fractional-reserve banking gains greater power, as a politician seeking to fight a trillion-dollar war without the necessary resources can now create a bank, borrow the money, and fund the war. By issuing paper money—a debt obligation against future tax revenues—they don't need conscription. They use that paper money to hire the army and fight the war. When banking gets corrupted, the money can distort the balance of power.

> *"There is no worse tyranny than to force a man to pay for what he does not want merely because you think it would be good for him."*
>
> —ROBERT A. HEINLEIN (*The Moon Is a Harsh Mistress*)

POLITICS

Constructing a centralized political authority—whether it's a king, authority channeled through agencies, or a confederacy—gives you the power to impose regulations.

In times of peace, people are free to do as they please. Trade relationships form such that you allocate production efficiently. The overall economy grows faster and larger, and the standard of living is higher. People's mental and physical health is better. But there's always someone who comes along with a new idea for another war. Generally, war is fought to take someone else's property and redistribute it according to the ruler's wishes. It's a never-ending struggle of the more powerful dominating the less powerful—only the tools change.

The vectors of vice are concentrated around banking and government. The dilemma is that the only way to weaken the bank is to strengthen the government. Eventually, that power becomes its own vice. We have more powerful entities today than at any point in history. Consider the power

Genghis Khan or Julius Caesar had 2,000 years ago; it pales in comparison to the power to devalue the currency of billions of people by 20% in a matter of months. You might be draining or diverting $10 trillion worth of economic energy. So it's a conundrum, but it all comes back to power and energy.

The Four Concentrators of Power

Agriculture Manufacturing Banking Politics

Lessons from Casino Jack

Let me tell you a story to explain how lobbying works in Washington, D.C.

A bunch of online poker gambling sites start popping up. Everybody loves them. But it starts eating into the earnings of several Indian casinos. These casinos are making a fortune because they've been given government licenses to allow gambling on their reservation, and their gaming revenue is tax-exempt. The Native American tribes decide they want to stop online gambling, so they go to D.C.

They hire a lobbyist named Jack Abramoff and pay him handsomely.[1] He keeps one-third, spends one-third on TV ads, and gives the final third to a variety of Christian fundamentalist ministries. Now, what do these ministries have to do with Indian reservations? Well, he convinced them to sign a letter that said something to the effect of "We think online gambling is an abomination in the eyes of God. It's corrupting America's youth. It's not Christian." And they got that letter published in the New York Times, the Wall Street Journal, and the Washington Post.

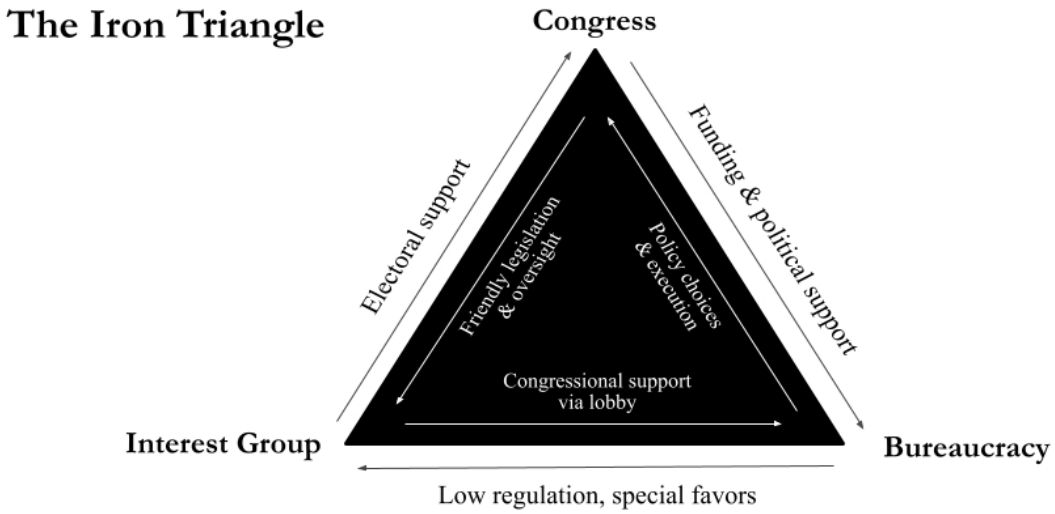
The fundamentalists began lobbying against online gambling. You had a seemingly unrelated non-profit organization making a particular moral objection. They weren't lobbying against gambling on Indian reservations or in Las Vegas. Why did they specifically choose to fight online gambling? Well, no one's giving them money to object to other breaches of morality.

A customer offered them money, so they took it and signed a letter. Then Abramoff took those letters to Washington and marched in front of Congress. A law was then passed making online poker illegal. Online poker was shut down, and people went back to the casinos and the Indian reservations. The casinos are happy.

In reality, the debate is not about whether gambling should occur but about whether gambling revenue should go to one particular group or its competitors, and whether it should be conducted online or in person. The strategy involves casinos funding lobbyists who engage a non-profit to act

as the front organization to influence public opinion. This approach may be combined with political donations. However, politicians cannot directly accept funds from Indian casinos to outlaw their competitors, as that would look bad. Instead, they receive money indirectly, often under the pretext of protecting America's youth, which the public finds acceptable.

Everybody gets paid: Abramoff, the politicians, and the non-profit. They would eventually make a movie about this called *Casino Jack*. It's known as the *iron triangle*, and it's been going on for thousands of years.



1. ↩ Abramoff received over $80 million in lobbying fees between 2000 and 2003 from six Indian tribes. See Schmidt & Grimaldi, "The Fast Rise and Steep Fall of Jack Abramoff", Washington Post, 29 December, 2005.

PART TWO

MONEY

Money as Economic Energy

WHAT IS MONEY?

Many people reach middle age without ever asking themselves, "What is money?" If you never pose this fundamental question, you will never consider it from an engineering perspective.

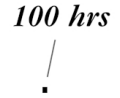
Humans prosper by channeling energy, and money is the highest form of energy that we can channel: economic energy.

Money is essential for enabling cooperation within civilization, which allows us to specialize.

The challenge is finding a reliable way to store economic energy.

So, if you're going to work 80,000 hours over your lifetime to make money, you should work 100 hours to keep it.

Earning Money



Studying Money

STORING ECONOMIC ENERGY

Over hundreds of millions of years, mammals evolved fat cells to store organic energy. But we've continually struggled to store economic energy. All the solutions we've arrived at come with nagging defects.

Picture yourself in Nigeria. The naira is collapsing, and owning U.S. dollars is illegal. How would you start a business?

The answer is often: you don't.

Everyone remains poor. Companies fail. The economy keeps collapsing.

It's akin to a Type 1 diabetic without insulin saying, "We just die!"

Clean money is as vital as antibiotics, fat, or electricity. It's a life-or-death matter for the billions of people currently facing economic misery.

THE IDEAL BATTERY

The premise required for the universe to function is the conservation of energy.

> A person without energy is a ghost.
> An object without energy is an image.
> **Money without energy is credit.**

The cost to copy something is what creates scarcity. The idea of scarcity in money is that when money is conservative, everything else will be conservative. If money is non-conservative, the world goes insane.

The current problem is that there is no digital money—only digital credit. Politicians can create as much of it as they want, at any time, resulting in energy loss of anywhere from 10

For the first time in human history, we've invented a technology (Bitcoin) that allows individuals and corporations to bind economic energy to themselves.

This means you no longer have to suffer a premature and painful economic death—a fate countless people have faced throughout history (see *The Story of Civilization* by Will Durant) and still experience today in places like Cuba, North Korea, Venezuela, and much of Africa.

Some won’t appreciate this technology at first, and that’s okay. Not everyone immediately adopts a new technology. When air conditioning was invented, the entire population didn’t install it overnight.

Bitcoin won’t be universally embraced for decades.

Satoshi offered us a gift: the ability to own your own money, which no one can take away from you.

For someone in Nigeria, Bitcoin could be what insulin is to a Type 1 diabetic: the ability to preserve their economic energy.

Under a Bitcoin standard, individuals, families, and companies could experience a dramatic increase in their economic lifespan.

Living longer is a good thing!

Currency vs. Capital

Any textbook economist will tell you that money is a store of value, a medium of exchange, and a unit of account.

They don't think much beyond that.

But in the modern world, **money has bifurcated into two distinct forms: capital and currency.**

Money is the superset.

CURRENCY

Currency is what I spend to buy gas, a donut, or pay rent. It's a liquid, stable **medium of exchange** for daily transactions.

It allows millions of companies to set prices for billions of goods and services. There are about 120 currencies in the world.

The Nigerian naira (NGN) is a medium of exchange.
The Turkish lira (TRY) is a medium of exchange.
The Argentine peso (ARS) is a medium of exchange.

But, in Argentina, the unit of account is the U.S. dollar. People *think* in terms of dollars. Why?

Because weak currencies are inflating at 14 to 24% per year, making them impractical for long-term economic calculations.

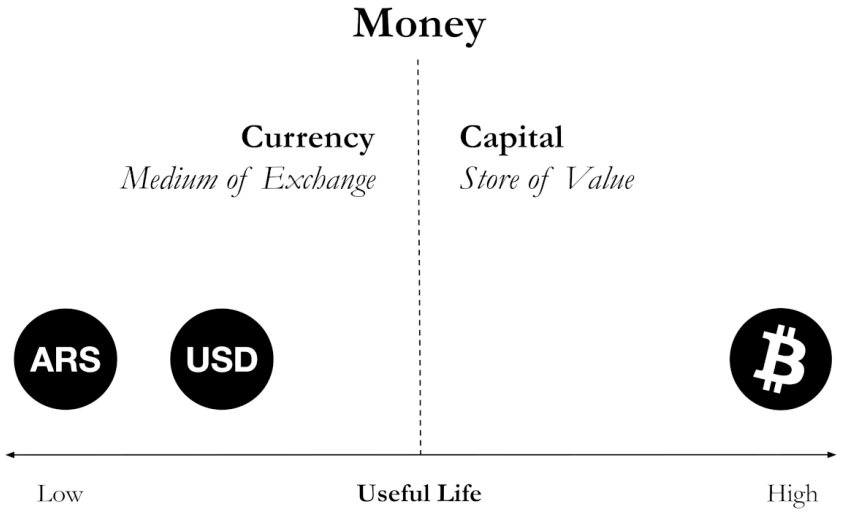
If you need money for the next four weeks in Argentina, use the peso. For the next four years, use the U.S. dollar.

And if you need money for the next four decades, use Bitcoin.

So weak currencies serve as mediums of exchange, and strong currencies (euro, U.S. dollar, and Chinese yuan) act as units of account (though, generally, it's mostly the U.S. dollar and dollar-pegged currencies).

CAPITAL

Capital is money you intend to hold for long-term wealth preservation. It's a **store of value**.



Humans store their capital in assets. The primary capital assets are equity, bonds, and property.

Public equities, bonds, and ETFs trade in the *capital markets*. Countries concerned about *capital flight* (wealth permanently leaving the country) often impose *capital controls* to stop it.

The *cost of capital* is the return your capital must generate to keep you from getting poorer. When you sell a capital asset, you might incur a tax obligation in the form of a *capital gain*.

Aside from distinguishing between currency and capital, governments can make assets more or less attractive via laws and regulations, determining what we use them for.

Laws and incentives shape where capital flows—and what we store it in.

PROPERTY VS. LEGAL TENDER

Every functional government dictates and enforces its currency as a medium of exchange via legal tender laws.

Designating something as **legal tender** gives it a massive tax advantage in trade.

In the U.S., the dollar is legal tender. I can trade it at **high frequency** (millions of times a month) without incurring a tax liability. My transactions are cheap, and my accounting is straightforward.

Now contrast that with **property** (another word for store of value).

The U.S. designates things like gold, the S&P index, buildings, Picassos, and Bitcoin as forms of property.

This means I generate a taxable event every time I trade it. I have to calculate the cost basis (what I paid for it) and what it was worth when I traded it. That difference becomes either a capital gain (a tax obligation) or a capital loss (a tax benefit).

So while I can trade currency at high frequency, I want to trade property at **low frequency**.

	MONEY		
Function	**Medium of Exchange**	**Unit of Account**	**Store of Value**
Examples	Weak Currency (NGN, ARS, TRY)	Strong Currency (USD, EUR, CNY)	Capital (Real Estate, Equities, Bonds, Gold, Bitcoin)
Tax Designation	Legal Tender		Property
Trade Frequency	High		Low
Useful Life	Very Low	Low	High

Inflation

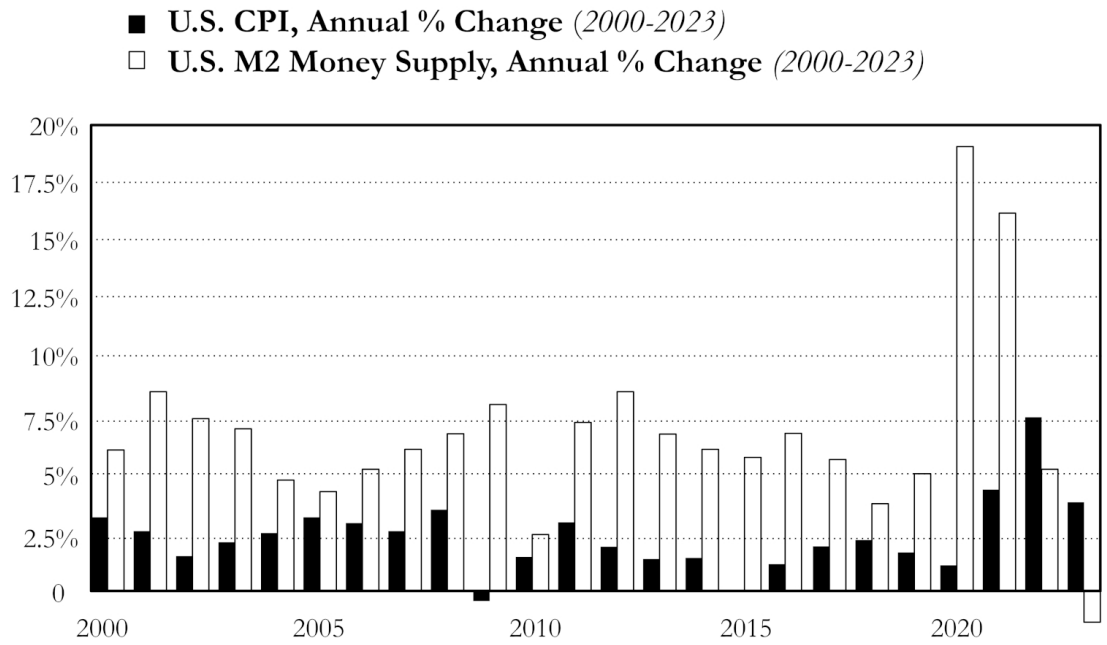
CPI: CHERRY-PICKED INDEX

There's an old saying in propaganda: *you can't tell people what to think, but you can tell them what to think about.*

As more money is printed, you'll see that inflation is not equally distributed. Therefore, there can be no single inflation number.

When the media and policymakers talk about inflation, they refer to the consumer price index (CPI), and everybody nods because we've decided that inflation equals CPI. But CPI is an arbitrary measure. It's a cherry-picked market basket of goods that won't increase in price. If I convince people that inflation is 2% while I inflate the money supply at 10%, I get to give the difference (8%) to anyone I want.

Every pension is indexed to CPI. That leads you to question many things. If the inflation rate is incorrect, perhaps gross domestic product (GDP) isn't either. All these metrics, debated by the talking heads on TV, are synthetic.

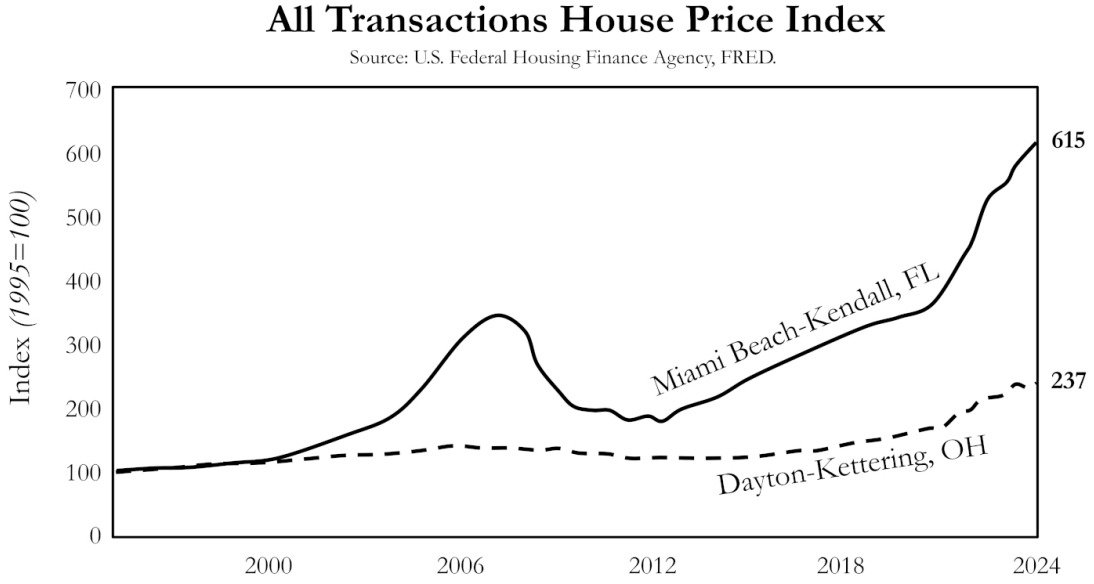


Source: World Bank; Board of Governors of the Federal Reserve System.

The true way to define inflation is the rate of price appreciation in a basket of goods, services, or assets *you* wish to acquire.

Do you want great medical care? Do you want to go to Harvard or MIT? Do you aspire to own a house?

When buying a house, the question becomes, "Where do you want to live?" The inflation rate of real estate in my hometown of Fairborn, Ohio, is not nearly as high as in Miami Beach. It turns out that there's a difference because one is scarcer. So you can't come up with a single number for real estate inflation in the United States.

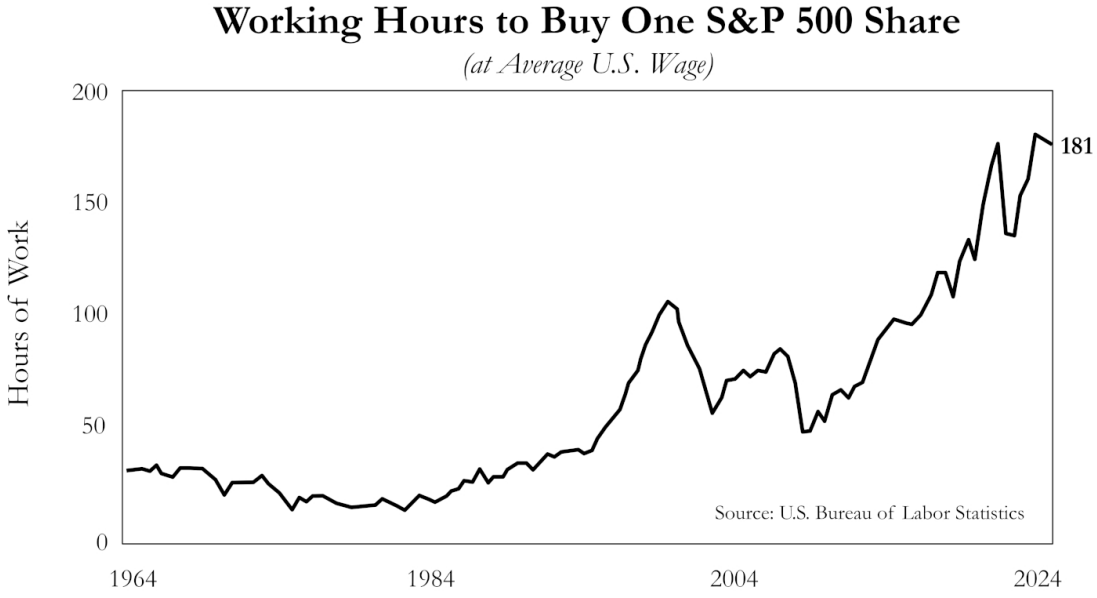


I have a nice house in Miami Beach, built in the 1930s. I have the deed from the original sale. It went from $100,000 in value to $46 million over 92 years (or 6.67% per year). That's why the wealthy buy real estate in Manhattan, Tokyo, or London.

Your inflation rate depends on your lifestyle. If I want to live alone in a rented apartment, my market basket is food, energy, rent, and a car. But, suppose I want to have a family and own a home, then that basket evolves.

It now includes family healthcare, college tuition, a house, property taxes, more utilities, appliances, and maybe family vacations.

What do the wealthy aspire to? They want to own equity, bonds, and commercial real estate—assets that produce income or dividends. The S&P index has emerged as a store of value in the United States. One of the most interesting metrics is the number of working hours needed to buy one share. We see that it's shooting up. Wages have not kept pace with the rate of inflation in assets.



As long as the media and policymakers define inflation as CPI (leaving out every scarce asset and financial asset), they can lock onto a basket of goods that are inherently deflationary. They're simply picking things that are deflating or manufactured by robots and AIs. Nobody's putting a Harvard degree or a Picasso in the basket. Therefore, there will be no check on their ability to keep printing money.

When they do print money, they call it "accommodation". So, instead of saying they're *devaluing* the money by $120 billion a month, they say they're providing $120 billion a month of *accommodation* to keep the markets functioning properly.

What does everybody in the world want? They want to work hard and make enough money not to have to work again. Call it a comfortable retirement at

an early age. It used to cost $2 million to buy a bond that yielded $100,000 a year, risk-free, forever. Now it costs $20 million.

It's like a Jedi mind trick where they say, "Well, this is not an asset you would want. This is for rich Wall Street bankers and bond traders. Don't worry about this."

If we redefined the market basket to include assets, we would have immediate inflation, and there would be immediate checks and balances on the ability of any central bank or any bank to devalue the currency. But CPI has been adopted as the metric because nobody wants to have those checks on their abilities. Now I can understand why someone running a central bank would want to focus on the metric (and why the mainstream media promulgates it).

So if you're defining a macroeconomic model with CPI as an input, you're just engaging in metaphysical musing that is increasingly disconnected from reality.

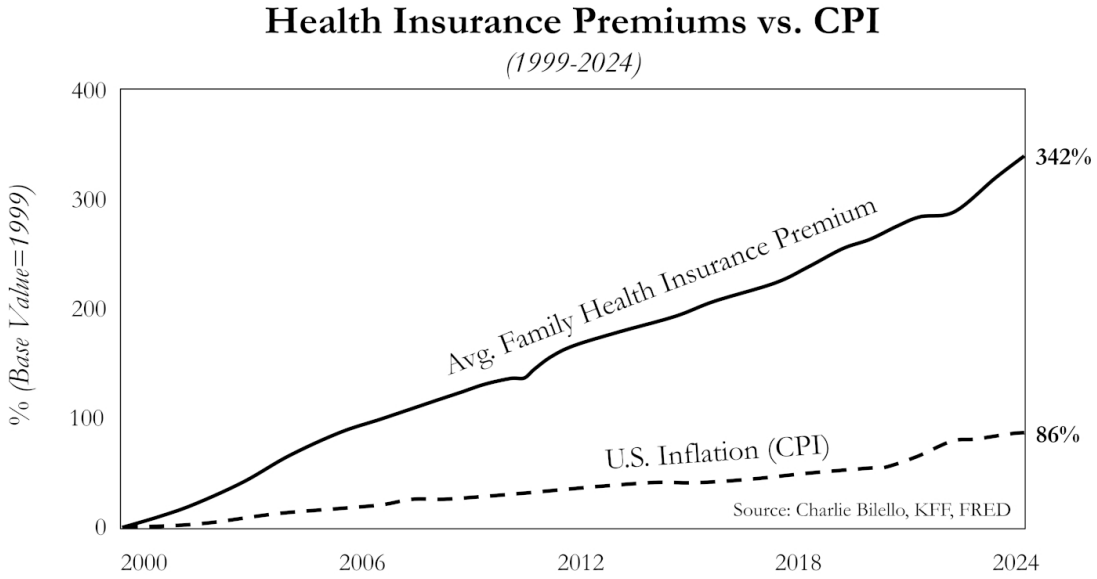
THE FIVE BUCKETS OF INFLATION

If you create an array of all the products, services, and assets in the world that you might purchase with your earned income, you'll find there are four standard buckets and one special bucket.

The first bucket is **deflating products.** This includes anything that can be dematerialized to your iPhone, iPad, or computer, such as video, music, news, books, maps, and information. It also includes anything manufactured in massive quantities, with a low variable cost and a high fixed cost, such as generic drugs, computer chips, and commodities.

The next bucket is **secondary products**, where inflation ranges from 0 to 2% per year. This includes unskilled manual labor, branded consumables, government services, and regulated services. They hold their value or tick up slightly.

The third bucket is the one nobody talks about: **scarce products**. But prices here are rising 6% to 8% per year. This includes things like luxury items, premium medical care, specialized services, and elite education.

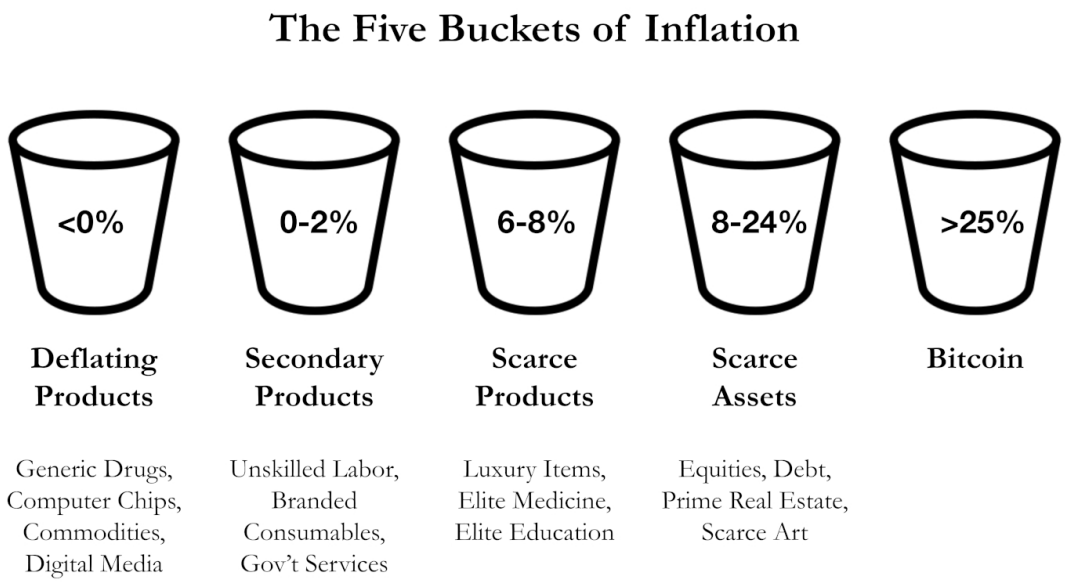


Thirty years ago, my MIT tuition was $9,600 annually; today, it's over $60,000—a sixfold increase (~6% per year).

The fourth bucket is where things get horrifically painful—**scarce assets**—where inflation ranges from 8% to 24% per year. This includes equities, debt, prime real estate, luxury property, and rare art.

The S&P index went from 1,000 to 3,500 over ten years (2010-2020), which gets you a decent clip (13.5% per year). Look at a penthouse apartment in New York, a house in the Hamptons, or an acre of beachfront property in South Florida—prices are going through the roof!

And, of course, I've got one last bucket that's inflating faster than 25% annually. Do you want to guess what that is? That's right…It's **Bitcoin**.

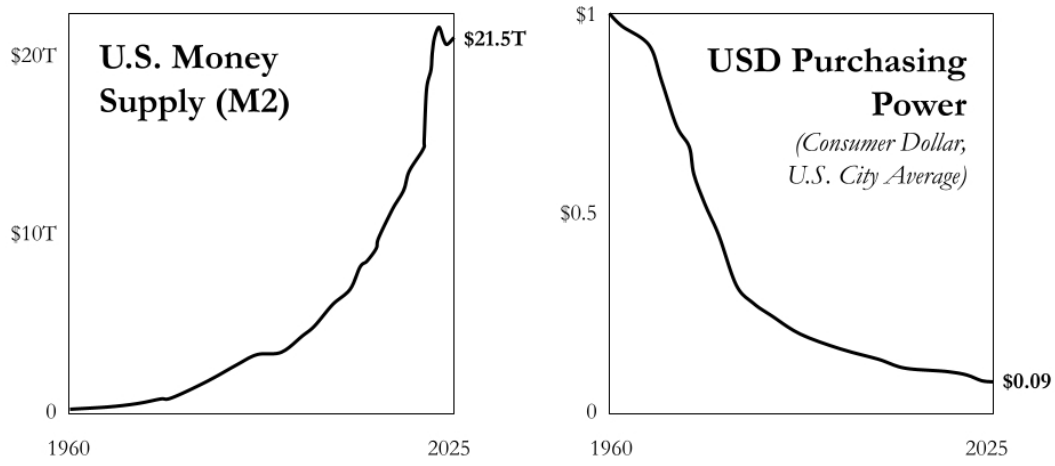


THE MOST IMPORTANT QUESTION

Why does anyone invest?

The only reason anyone invests in anything is because they believe the risk-free rate of return on their money is too low to keep up with inflation.

If a currency isn't preserving purchasing power, rational actors—corporations, investors, or families—will trade it for assets that serve as a store of value.



Sources: Board of Governors, U.S. Federal Reserve System; U.S. Bureau of Labor Statistics.

Thirty years ago, less sophisticated investors would have placed their money in bank savings accounts that generated 5% interest annually (an era that ended when the yield on savings accounts fell to zero). Moderately sophisticated investors would have put their money in mutual funds, while highly sophisticated investors would have chosen real estate ventures, which offered enhanced property rights and leverage.

But if I told you that your money would grow in value by 10% a year and you knew the inflation rate would be zero, you wouldn't invest in anything.

You'd just park your money in a safe place and wait for it to accrete in value. In that environment, the average person *isn't* an investor. The only people who should be investors, in theory, are professionals or venture capitalists; people who spend all their time analyzing opportunities to ascertain the true long-term value of the cash flows. But today, the world is full of people making investments to preserve their wealth due to a weak currency.

By the end of 2021, post-pandemic, it became clear that we'd monetized many different assets. As central bankers flooded the economy with newly-issued currency, everyone was trying to find a tangible asset that would hold its value as the currency debased. Everybody chooses a different asset depending on what they know and what they're comfortable with.

If the law of conservation of energy applies to money, then increasing the money supply by 20%—while keeping the total energy constant—means that all monetary values have to adjust accordingly. If these changes did not occur in deflationary products, they must have been *even greater* elsewhere.

The most fundamental question every investor has today is: What percentage increase in the money supply do you expect the Federal Reserve to print?

Expected Change in Money Supply (M2)

	2025	2026	2027	2028	2029	2030	2031	2032
%								

If you put in the numbers 0%, 0%, 0%,..., you're an optimist. And now you've got a thousand complicated choices.

But if you put in the numbers 15%, 15%, 15%,..., you know you can't buy bonds, you can't buy real estate, and you can't buy 95% of stocks. They will all underperform the rate of money printing.

And if you put in the numbers 20%, 20%, 20%,..., your only rational option is to buy scarce assets: trophy assets, rare art, Bitcoin, and other things uncorrelated to fiat cash flows. Because once inflation hits that level, all the models break. Everything you've learned in the last 30 years is irrelevant.

What should you buy in Argentina if the currency is collapsing?

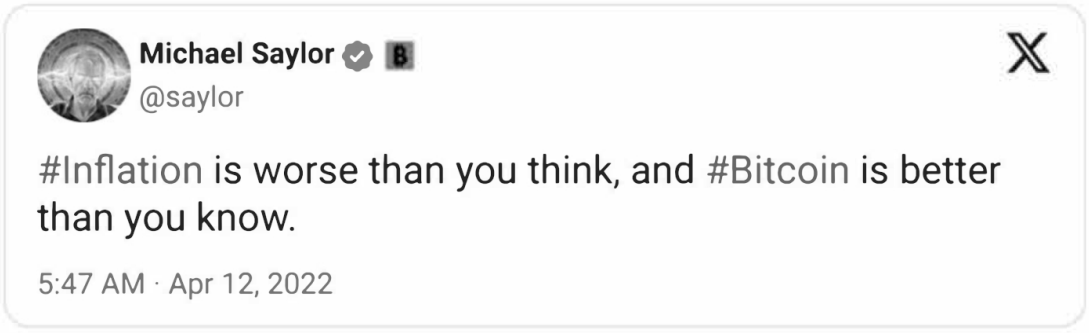
The answer is **nothing**.

If the peso slides against the U.S. dollar from 3:1 to 150:1 over ten years, there is no financial strategy, money manager, or portfolio construction that will work.

The only thing that will work is to forward finance all your cash flows, finance all your fixed assets, and issue as much equity and unsecured debt

as you can in pesos. You then convert it all into dollars, and place it in a bank outside the control of the Argentine government so that they can't convert it back into pesos and debase it.

What I've just described in a nutshell is the strategy of buying Bitcoin. By converting your money into Bitcoin and putting it in a bank in cyberspace, you're indifferent to how much currency the Federal Reserve—or any central bank—prints. You've isolated your risk in that way.



The Ideal Model of Money

What is the ideal model of money?

It's a ledger that is:

1. **Shared**: everybody has the same access to it.

2. **Immutable**: no one can doctor it.

3. **Correct**: it's mathematically complete or proper.

Imagine a godlike being descended on Earth and created this perfect, incorruptible system. Next, they telepathically dropped that shared, immutable, and correct ledger into the heads of every human being. Every time you incur a debt or credit, the ledger updates in real time so that no one can corrupt it.

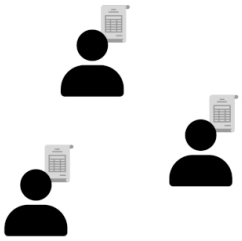
That's the ideal model of money: a shared, immutable, and correct ledger.

Using this framework, we can begin to see what the perfect form of money might be.

This gets to the heart of property; it's essentially just a list of who owns what. And that ownership is based on what favors you've rendered to the market. In return, you've then earned the right to redeem favors from the market in the future.

Money is the ultimate form of property because it's the only one that can be redeemed for *any* other form of property.

3 Critical Dimensions of Ideal Money



Shared

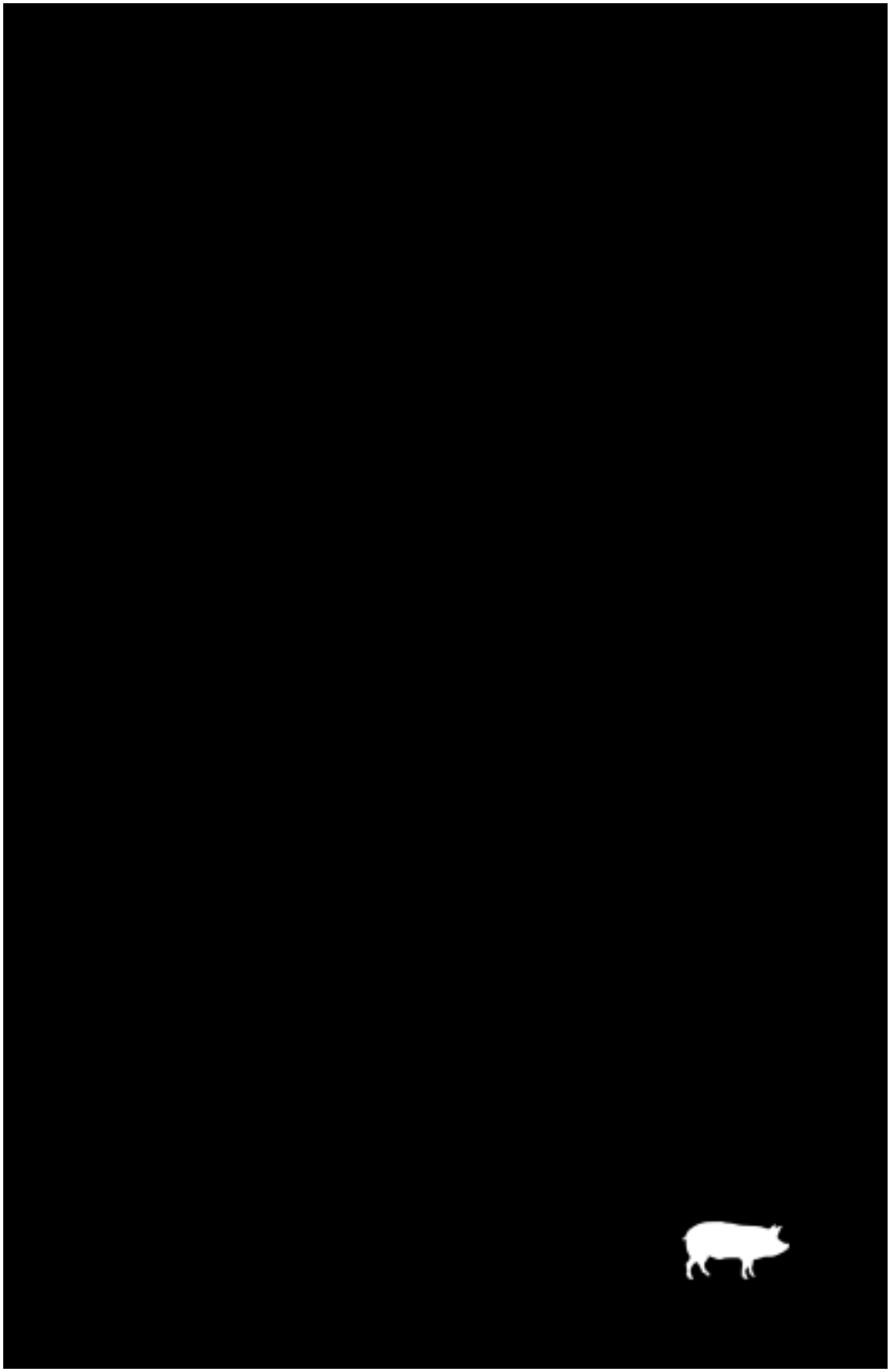
Freely and permanently accessible

Immutable

Irreversible and unalterable

Correct

Mathematically complete and proper



PART THREE

WEALTH

The World's Wealth

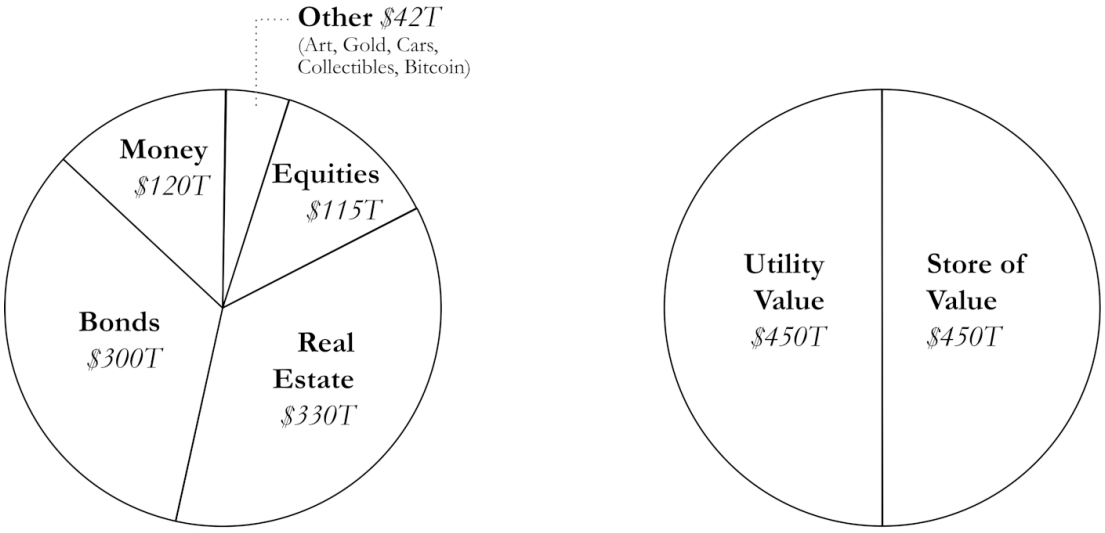
A TALE OF TWO ASSETS

There's about **$900 trillion** of wealth in the world (and growing).

It's spread across various assets like real estate, art, gold, collectibles, equities, bonds (corporate and government), and currencies.

But here's another way to look at it: $450 trillion of assets are held for their **utility**, and $450 trillion for **capital preservation** (store of value).

Total Global Wealth: ~$900T



by Asset Class *by Function*

You might own a bond because you want a fixed income in a particular currency. You might own Apple stock for the dividend. You might own real estate to capture cash flows. They're being held for their utility value.

In a world without a perfected form of capital, we have to monetize real estate, equities, bonds, etc., because we need somewhere to store wealth.

This means these assets cost more than they otherwise would, as they're serving the dual purpose of preserving capital.

I know wealthy people who own 16 estates on the East Coast but only live in two. Why did they buy them? Because they make a lot of money and need somewhere to park it. If the wealthy weren't using homes to store capital, they'd cost half as much. The sad part is they don't even *want* the house; they just want a vehicle for long-term wealth preservation. That's how the economy gets distorted by the perverse incentives stemming from imperfect capital.

When you start thinking about how this $450 trillion of long-term capital is stored, you'll begin to see the engine of the economic revolution.

ASSET LIFESPAN

Here's a helpful equation to determine the useful life of your money in an asset:

L = V/M

An asset's useful **lifespan** (*L*) is equal to its **value** (*V*) divided by the annual **maintenance** cost (*M*).

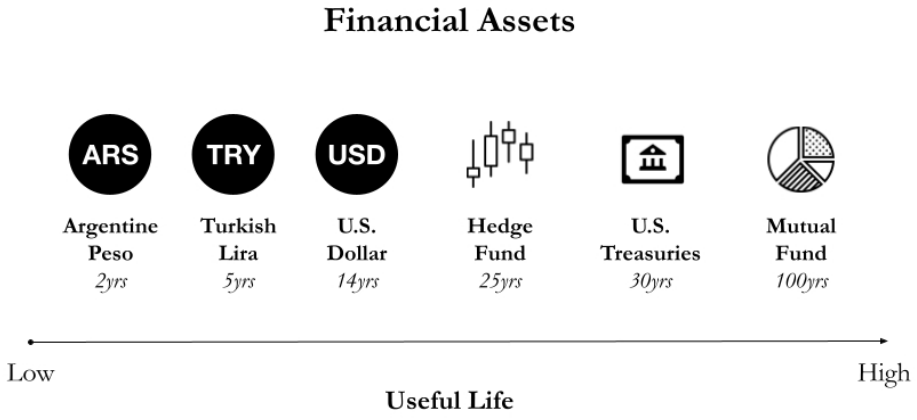
In other words, the cost to keep that asset in pristine condition (avoiding depreciation or decay) every year.

FINANCIAL ASSETS

Many individuals and corporations use **financial assets** (equities, corporate bonds, government bonds, currencies, etc.) to preserve capital.

If you store $1 billion in the Argentine peso, at a 98% inflation rate, you lose $750 million in two years. The peso strips you of your economic energy; this is not a good long-duration asset. With the Turkish lira, your capital lasts three to five years. In the U.S., the average monetary inflation rate of the past century is 7%, so the U.S. dollar will last 14 years. But it's not like you have it for 14 years; the life is gradually being sucked out of it over that period.

What if you put your money in a hedge fund? It's a 2% management fee and 20% of any upside, which works out to about 4% a year. That means it's a 25-year asset. U.S. treasuries will currently give you an after-tax yield of about 3%, lasting 30 years. You could use a mutual fund for an annual 1% fee. But that's about the best you're going to get.



Inflation dilutes the value of financial assets, but it's just the tip of the iceberg. You'll also get diluted by tariffs, tolls, torts, transfers, and taxes. You get taxed each time you move or transfer the asset. And if the taxes don't take you and the torts don't undo you, you've got the risks of weather, competition, obsolescence, politics, and catastrophe potentially diluting the value of your capital over time.

On average, financial assets will last you 30 years.

Financial Assets: Risk Factors

Tariffs	Taxes	Competition
Tolls	VAT/Sales	Weather
Torts	Excise	Accident
Trading	Capital Gains	War & Crime
Transfers	Income	Regulation
Insurance	Dividend	Obsolescence
Storage	Inheritance	Incompetence
Spreads	Gift	Politics
Licensing	Property	Catastrophe

To preserve economic energy, you have to constantly fight against all that friction. Hence, most people give up on financial assets to preserve capital and, instead, turn to **physical assets**.

PHYSICAL ASSETS

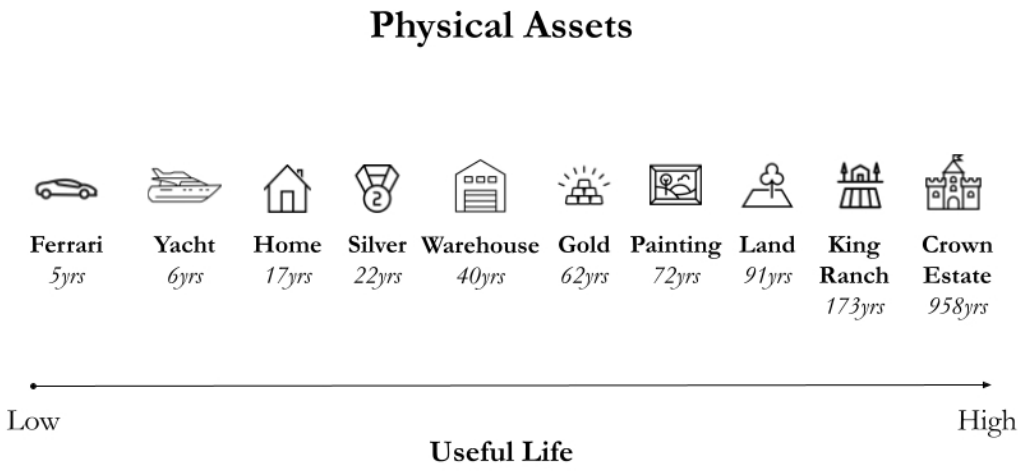
Physical assets include things like real estate, art, gold, and collectibles.

A Ferrari is a physical asset, but it's not a good way to preserve your money forever. After five years, you've spent as much on insurance, upkeep, and depreciation as it's worth. Yachts aren't much better. You might spend 10% of its purchase price annually operating it, and on top of that, you'll get hit with depreciation. (**Don't store your money in yachts**!)

A $10 million home in Miami Beach? You better expect to come up with another $10 million to maintain the house over the next 17 years. Silver will preserve your capital for 22 years. A warehouse: 40-50 years. A bar of gold: 62 years. A painting: 72 years.

What about land? The average property tax in the United States is 1.1%. That means the capital stored in your land is going to last 91 years (unless the government reassesses the property's value upwards, in which case it'll be less).

The oldest family ranch in the United States is King Ranch. They made it 173 years. Every other family in the country failed. The longest-held property is the Crown Estate in the United Kingdom. You could say the royal family held it since 1066, but it passed from the Plantagenets to the Stuarts, through the Lancasters and the Yorks, and eventually found its way to the Hanover family. Maybe seven different families split it; none of them got to take it with them.



Entropy is sucking the economic energy out of your physical asset. Politicians are also very creative. They've got all sorts of taxes: city taxes, county taxes, state taxes, federal taxes, transfer taxes, and usage taxes on property.

If that doesn't get you, there's also rent control, price controls, or a culture shock. If you want a great vignette on why it's important to have mobile capital, read any history of the Warburgs' experience and what their family —and all Jewish families—went through in 1930s Germany, and what the bankers had to do to move capital out of the country.

Physical Assets: Risk Factors

City Tax	Competition	Weather
County Tax	Discrimination	War
State Tax	Recession	Flood
Federal Tax	Currency	Decay
Transfer Tax	Expropriation	Accident
Usage Tax	Tenants	Crime
Rent Control	Technology	Catastrophe
Price Control	Traffic	Insurance
Culture Shock	Torts	Energy

You might think physical assets last a thousand years, but in reality, the best you'll get is closer to 50 to 75 years.

Gold: Dead Money

THE LEAST AWFUL COMMODITY

A commodity is an asset without an issuer. It's something anyone can mine, drill, or grow, in any quantity, and then dump on the market.

Holding a billion dollars of soybeans for 100 years probably will not become generational wealth for your grandchildren. Commodities are awful investments. Gold is just the least awful.

Ask 1,000 billionaires, "How many of you made a billion dollars investing in gold?"

The answer is zero.

Ask 1,000 wealthy families, "Now that you're wealthy, are you planning to buy a billion dollars of gold?"

The answer is no.

SUPPLY INFLATION

Gold is not a closed system. Either there is inflation due to mining, or someone dumps gold into your market from elsewhere.

Assuming gold miners extract 2% of the above-ground supply each year, whatever percentage of the gold supply you own is getting diluted. It's 2% per year under the best of circumstances. Under the worst circumstances, the amount of gold in your economy skyrockets. Look at what happened when the Spaniards sacked the Aztec and Inca empires. They flooded Europe with New World gold, resulting in a massive inflationary shock[1].

What if you wanted to store $100 million of gold for 100 years? Let's say you put it in a vault in New York at J.P. Morgan in 1900. Assuming gold producers mine 2% more gold each year, the half-life of gold is 35 years. You've gone from $100 million to $50 million in 35 years. It then drops to $25 million after 70 years, and about $13 million after 100 years. You've depleted your gold battery by 87%!

And that's assuming:

1. The U.S. wins every war,

2. J.P. Morgan doesn't fail, and

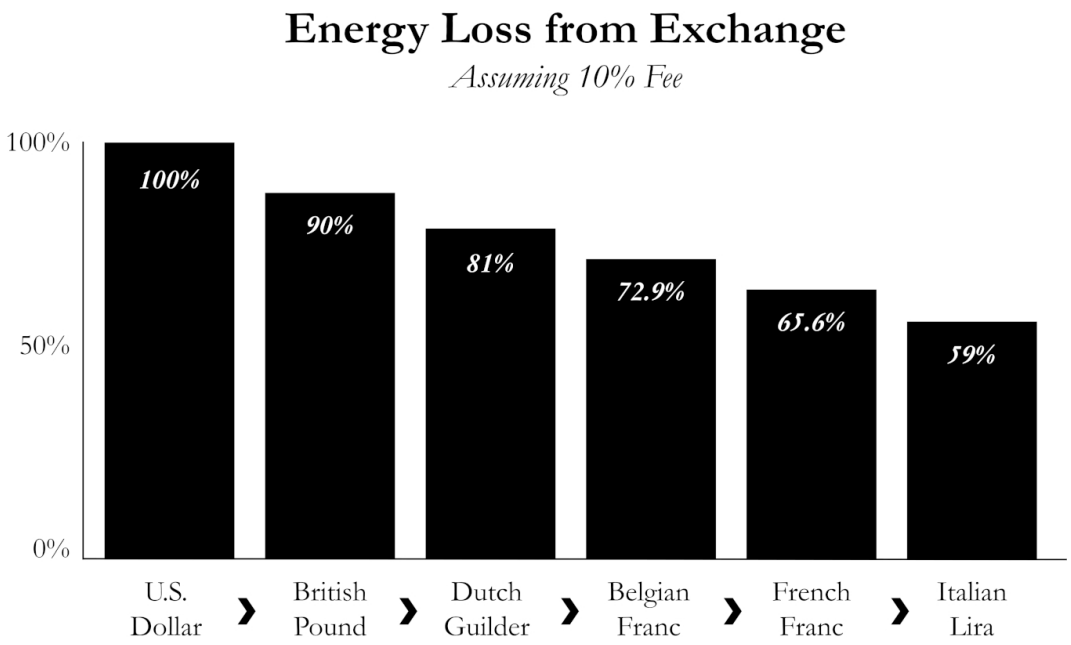
3. No one drops a bomb on New York City.

In the best-case scenario, you'll get 13% of your money back.

EXCHANGE FRICTION

I remember traveling from London to Rome before the formation of the European Union. Every single mercantile system had its own internal coin system. And every time you cross a coin network, a money changer in the middle takes 10%.

I showed up with U.S. dollars and converted them into British pounds. Then I flew to the Netherlands and converted my pounds into Dutch guilders. Next, I went to Belgium and converted the guilders into Belgian francs. I then went through France, converting again, and finally reached Italy, converting once more. After 72 hours, I was left with *half* of what I'd started with. This makes sense using the analogy of energy. As every time you transform energy (e.g., thermal to kinetic), there's a loss. In short, **there's a high energy cost to high-frequency trading based on coinage.**



AUTHENTICATION & HYPOTHECATION

The idea of coinage is based on metallic money, and the highest form of metallic money is gold. Coinage was an attempt to make authentication self-evident. Isaac Newton worked on the problem of how to create a good coin. **Out of everybody I know, I don't know anyone who's ever authenticated a gold coin;** it's too complex and expensive. And, if you can't authenticate it, someone will debase or counterfeit it, undermining the *shared* and *correct* part of the ledger.

We have stories of the Lydians and the Romans debasing their coinage, eventually leading to the collapse of their respective empires. Alternatively, you can lie about the amount or existence of gold in the vault, all the while issuing paper claims. The result was thousands of different systems of coinage over time, with every one of them struggling.

TRANSPORT & SECURITY

Gold is physical, which brings the threat of theft and confiscation. Small amounts are impossible to secure, while large amounts are expensive to secure.

Moving $100 million of gold 100 miles will likely cost you $100,000 (0.1%), depending on the level of security. But what if you wanted to move it 10,000 miles? Well, that's about 3,000 lbs (1.5 tons) of gold, so you're going to need an airplane with armed guards. You fly 18 hours across the world at a cost of $10,000/hr for the guards and $4,000/hr for the jet. That's $180,000 plus $72,000 for a total of $252,000. Now we're up to 25 basis points (0.25%) to move it across the world once.

The security cost scales (in some ways exponentially) with the amount you have.

DISTRIBUTION

How do you distribute something that's difficult to move and authenticate, and trivial to confiscate? By "distribute," I mean how do you give it to a billion people?

Practically speaking, if you distribute $1,000 of gold coins to a billion people today, there would be a 35% markup/markdown every time it trades. You'd pay $90 for $60 worth of gold, and be lucky to sell it for $40. The transfer cost would be obscene. And if those eight billion people wanted to move it daily, the security costs would consume all of the energy that humanity produces.

VELOCITY

Try to figure out the cost of moving $100 million of gold 1,000 miles, every day for 365 days in a row. The conclusion is that **gold is too heavy and therefore has no velocity.**

It goes into Fort Knox, sits there for 30 years, and nobody audits it. Under those circumstances, you can almost delude yourself into saying it's secure.

But that's only because it's stagnant.

DIVISIBILITY

A 1-oz gold coin can't be divided. Hence, coinage systems were oftentimes composed of gold, silver, and copper coins representing three denominations or scales: one thousand, ten, and one. The shortcoming is that once you create a coinage system and start shuffling them around in a network, you can only trade to the extent that you possess those tokens. Prices don't quite work because you never have the right combination of change. So all these money changers pop up, adding friction. And if people lose the tokens, their money is gone.

Gold was the best form of tokenized energy in the Bronze Age. But, by the Middle Ages, it was clear it was going to be replaced with some type of fiat, chequing system, or paper ledger system due to these defects.

AN INVITATION TO CONFLICT

Gold isn't just expensive, slow, and difficult to move; it's also *dangerous!*

After a city is bombed, the people and cattle are dead, the food and water are gone, but the gold's still there.

So when in doubt, bomb first, then sift through the ruins. That's the fundamental problem with gold—it has always been an invitation to war, criminality, and violence.

In ancient Greece, one city would invade another to take their gold, melt it down, and mint new coins. I could give you 1,000 historical accounts of, "We sacked the city, burned it to the ground, and took the gold." You never hear of an invading country killing everyone to take their paper currency. The last thing in the world you want to do is carry around immutable money on your person when someone is incentivized to kill you and take it.

COUNTERPARTY RISK

Where will you store your gold? Will you bury it under your mattress? Probably not. You have to trust a counterparty to take care of your gold. When you put it in a bank vault, you've surrendered your monetary energy to that bank. And every bank fails. In 95% of the cities in the world, the banks failed over the last 100 years. But countries and regimes can fail too.

So, if the criminals don't take your gold, the counterparties do. And if the counterparties don't take your gold, then your government does. And if your government doesn't take your gold, the hostile foreign government does. Ultimately, gold has imperfect property rights due to its physicality. **You're trusting a counterparty, a company, and a country.**

On the other hand, if you buy Bitcoin, you have the option (not the obligation) to take custody of those keys. And that's advantageous for you for two reasons. Firstly, you can switch custodians quickly. In under an hour, you can move your money from one bank to another or one country to another. That keeps everybody honest. And it's useful in a capitalist world to have options such that no one's holding you over a barrel. Secondly, someone can hold a gun to your head, kill you, and take your gold. But they can't take your Bitcoin. And there's a very important subtlety there, which is, at the end of the day, you control your life force. It shifts the balance of power back to the individual from the company, custodian, country, or anybody that would wish you harm. It's a matter of decency and sovereignty for the individual.

THE MYTH OF A GOLD STANDARD

We have this notion that there was a gold standard in the good old days, but it's not clear to me that it wasn't replaced 2,000 years ago. The Sumerians used clay tablets. They have ledgers on them, right? So, isn't it possible that chequing systems existed thousands of years ago, privately enforced by banks? It's likely a merchant always had their ledger, and you held a credit with the merchant.

Proto-Cuneiform tablet with seal impressions: administrative account of barley distribution. Sumerian. ca. 3100-2900 BCE. source: TheMetropolitan Museum of Art, Raymond and Beverly Sackler Gift, # 1988.433.1.

If you're sailing on a ship for months at a time, the quartermaster has all the supplies. If you want cigarettes or alcohol, they charge your account. When the voyage is over, they debit it against your wages. This has been going on for as long as people have been sailing ships.

What we have is the myth of the gold standard. **There was never a time when *all* money was gold.** All you had was a time when the principal asset for storing value over the long term was gold. We've always had an asset-currency system. The asset was gold, and the currency was a cheque—essentially a chequing system managed by a central counterparty (what we call banks today).

RISE OF THE CITY-STATES

If I have to get my credit from the local merchant, trade will be local. **You can only create a network that expands out about 10 to 20 miles.** Beyond that, the trust breaks down. The implication is the *city-state.* You get Renaissance Italy with a hundred different city-states, each with its own system of trust (ledgers and coinage). **Since there is no universal money, you can't have the rise of the nation-state under a gold standard.**

We see the progression of money as technology through the ages. If you have a better form of money, you have a better economy. We come back to this issue of whether it is *shared, immutable*, and *correct*. The more widely shared, the larger the economy. The more immutable, the higher the integrity of the economy. The more correct, the more efficient and effective the economy. The faster the network updates, the faster the economy.

NO APPLICATION PROTOCOL

Gold fails in theory because its protocol (i.e., gold mining) is not conservative. Gold bars and coins act as gold's base layer. But how many people do you know who can refine or melt down gold to create something with it? Gold's applications are limited by the laws of physics. Translation: it has no application protocol. If I want to do anything with gold above the base layer, say, create the equivalent of a gold cheque, I've got the same problem as fiat currency. It becomes a fiat standard with some kind of gold reserve. **Gold fails primarily because there's no good application protocol.**

CONCLUSION

Two thousand years ago, shared ledgers almost certainly existed, using gold as a method of final settlement. We know that this system failed at different points and that gold was debased. Rome was the greatest empire on earth, and it collapsed when their final settlement network failed. You had an

endless succession of empires (generation after generation) rising up with a new gold standard. The successor would then debase the coinage, and that empire would collapse. Another empire would come along, and the cycle would start over again. **Gold was our best idea at the time.** And yet, the myth of gold as immutable money or *the* sovereign store of value stayed with us for thousands of years into the 20th century.

If you were looking for a non-sovereign store of value between 1971 and 2009, you could have used gold. You could have also used property like land, commodities, oil rights, or art. There's no one right answer. The free market went back and forth, but **gold died as a store of value when Bitcoin was formed.** It's not fast enough, smart enough, or strong enough to compete. Yet, everything that lives in a Darwinian world *has* to be faster, smarter, stronger, and more adaptive. The beauty of Bitcoin is that any individual or country can put its money in cyberspace and no one else can impair or steal it. Then there's no point in invading a country if there's nothing to take.

If you remove all the imperfections from gold, you get Bitcoin. However, even saying that Bitcoin is far superior to gold undersells it.

---

1. ↩ "The Price Revolution" (late C.15th to early C.17th) was a period of sustained inflation across Europe (particularly Spain) due to the significant importation of gold and silver from the Americas.

The 18 Defects of Real Estate

If you were a wealthy family in the 20th century and didn't make your money in technology, chances are you made it in real estate. You likely bought highly desirable commercial property in London, Paris, or New York City.

Real estate has a utility value to the person using it, and this applies whether the user is a consumer or a business. The portion of the real estate's price that exceeds this utility value is the *monetary premium*. A significant amount of commercial real estate carries a monetary premium. You can see this in the many people who have excess cash but prefer not to hold it as cash; instead, they feel compelled to buy investment properties.

Monetary Premium

People might say: "I bought a second home to rent out," "I partnered with a few friends to buy a piece of commercial real estate," or "I'm an investor in real estate because that's where I wish to store my money." However, **in a hard-money environment, the average person isn't an investor.** In theory, the only people who should truly be investors are professionals or venture capitalists who have dedicated all of their time to analyzing opportunities and determining the true long-term value of cash flows. Yet, the world is full of people making investments simply to preserve their wealth.

How might Bitcoin demonetize real estate?

Well, start from first principles and ask, “What is property?” You can arrive at pure property either by removing all the defects of real property or by starting from nothing. But let’s begin with real property and strip away every defect from it.

Let’s say you have a piece of commercial real estate. It’s a $2 million or ₿20 (as of July 2025) warehouse. Then I happen to pull a genie out of a bottle. The genie says, “Michael, I’ll grant you 18 wishes.” So I start using them to fix the defects in my warehouse.

1. IMMORTAL

A warehouse has a finite life. It’s not going to last one hundred years, let alone one thousand years. Eventually, it’ll rust and collapse. So, I ask the genie, “Why don’t you make the building immortal so that it lasts forever?” How do you do that? You make it out of pure energy. Stars last a billion years—make it out of the same material.

2. INDESTRUCTIBLE

Buildings are prone to damage. If there’s a hurricane or an earthquake, or if someone drives a truck into it, the building can be damaged. So I command the genie to make it indestructible. Now it doesn’t matter if it gets struck by lightning or crashed into; it’s not going anywhere. Remember, the building was worth $2 million. Well, is a building that’s indestructible and immortal worth more or less now? Generally, a building that will last forever and that you can’t destroy is more valuable.

3. NO MAINTENANCE FEES

Buildings require maintenance, which oftentimes amounts to fees of 1 to 3% per year. If I have a building made of steel, I have to paint and repaint it

to prevent rust. That upkeep goes away if the building is indestructible. Insurance is also a type of maintenance fee. Well, if the building is indestructible, the need for insurance goes away too. So, without maintenance fees, my building is worth even more.

4. NO PROPERTY TAXES

In Florida, the property tax on a residential building is 2% a year. My $2 million building costs $40,000 a year just to hold it. So I tell the genie to make the property tax go away. How do we achieve that? We move it so that it's not in any city, not in any state, and not in any country. We move it into cyberspace. There's no property tax in cyberspace. So now I've got an indestructible, immortal, maintenance-free building with no property tax. It's getting more and more valuable.

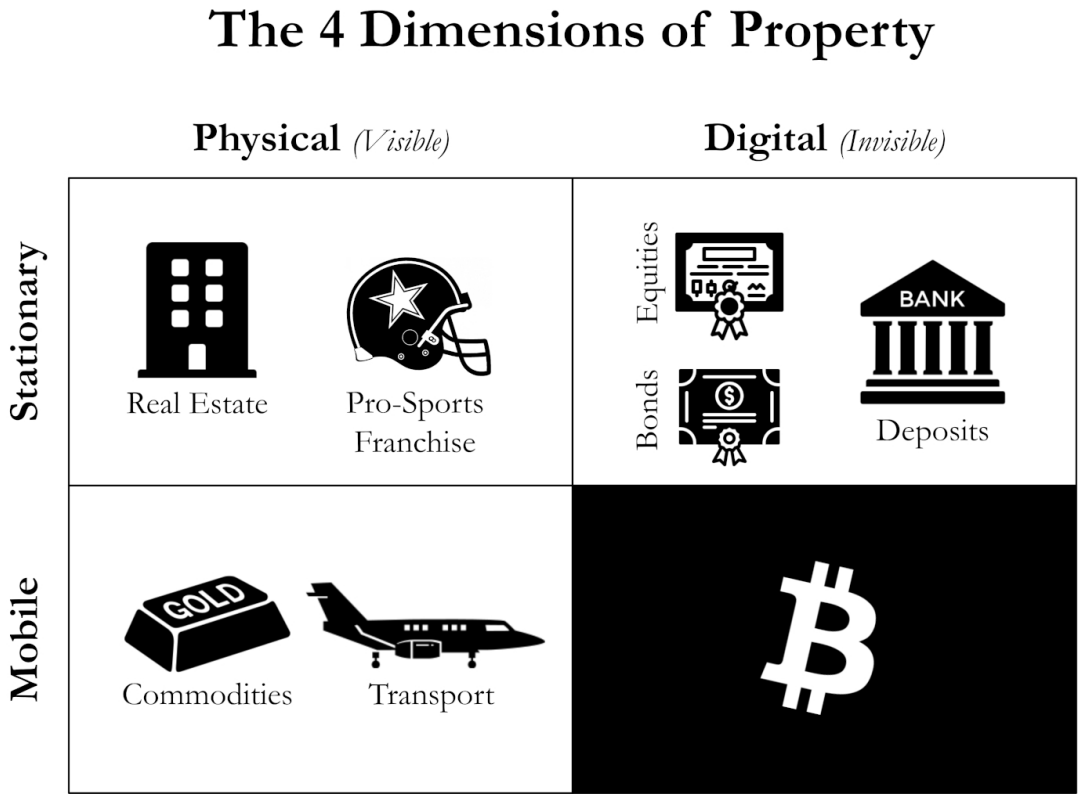
5. TELEPORTABLE

What impairs the value of any building? It's a limitation on who you can rent it to. Let's say the building is in California, but all the potential customers are in New York City. So, I wish for it to be teleported to New York City. Next, I want the building to be in Tokyo during the Olympic Games. The genie has made my building instantly teleportable to any location. I've just upgraded the property's value a bit more.

6. JURISDICTIONAL OPTIMIZATION

The problem with stationary physical property is that you *have* to become a political actor; otherwise, another political actor will just take it from you. And there's no middle ground. The point at which you're no longer politically capable of defending your property—perhaps your children or grandchildren aren't as politically sophisticated as you are—the county, city, or state can just crank up your property taxes, and expropriate the land.

Different jurisdictions place different restrictions on it, so I want the property to be unimpairable by local restrictions. Anything physical, by definition, can be impaired, but anything in cyberspace has a decent chance to avoid impairment, simply by moving it. The idea of teleportation is not just in relation to space, but also moving it through jurisdictions.



7. RENT AT ANY FREQUENCY

Generally, you can only rent a building by year or decade. But what if someone is willing to rent it at $100,000 a day, but only for three days during the Monaco Grand Prix? That's an example of when there's infinite demand and people will pay 10x more. So I command the genie to let me rent it at any frequency. That upgrades the value of the real estate.

8. SUBDIVISIBLE

Someone comes along and offers to pay me quadruple the rent, but they only want a quarter of the floor space. So, I want to be able to subdivide it. I want to subdivide the building into four pieces, ship it to four different cities, and rent it to the highest bidder. The ability to subdivide and recombine the property, at any frequency, increases the building's value. What you're doing is morphing the building, day by day, place by place, to maximize the rents.

9. TRANSFORMATIONAL

A warehouse isn't easily reconfigured. A flexible building sounds much better. The genie casts a spell and allows me to instantly convert the building on demand into a school, sports stadium, hotel, or even a container ship. Suppose someone urgently needs a vessel to ship natural gas? My real estate would be a lot more valuable if it could become a different *form* of property.

10. DEVELOPMENT RIGHTS

The other thing you want from any property is to be able to upgrade it over time. If I own a parking lot, it might be worth $1 million. But, what if I could develop a thousand-story building on top of the same footprint? My development rights are now worth a lot!

In New York City, you often see parking lot operators who sell their air rights (the right to develop a property vertically) to an adjacent hotel or office building. The air rights might be worth $20 million, but the parking lot's never going to generate $20 million. So my property would be a lot more valuable, assuming I have the right to develop it. Who controls that right? It might be your neighborhood, your city, or your state. But if I have property in cyberspace, I would have no limitations on my ability to develop it.

11. TRANSFERABLE PROPERTY RIGHTS

You might say, “Wait a minute, Michael. What’s the point of selling the rights to build a thousand-story building when the tallest building in the world is only 163 stories?” I would say that’s the tallest building of *this* century, what about the *next* century? What about when we have adamantium steel or some new construction technique? Do you really believe that the tallest building in existence today will remain the tallest building for all of humanity? Roll the clock back 200 years, and the tallest building is six stories just about everywhere.

So I want the ability to continue to upgrade my property or sell the rights. Do those property rights have value? Well, ask the people who own the Beatles’ music catalog. Intellectual property rights have value over time, and so will these property rights. How many people have managed to sell their property rights? Not many, because we never thought of them that way.

12. DIGITALLY UPGRADABLE

Real estate in the physical world is upgraded with tractors, machines, steel, and electricity. But what if I could upgrade my property using computer chips? If you look at the efficiency of a computer chip, it’s improved by a factor of a million over the past 20 years. But, if you look at the efficiency of construction cranes, they have not improved at a comparable rate. So, clearly, moving out of the physical domain and into the computational domain for development adds to the value of the property.

13. INVISIBLE & PRIVATE

If there was a 100-story indestructible shining building in the middle of a city, don’t you think the people in that city would start resenting its owner? I don’t want to own a perfect piece of property in the middle of a city where

there are malicious actors. I want the property to be in the middle of the Milky Way, a billion light years away, where no one can see it and no one will resent the fact that I have it.

The genie then says to me, “I have an idea. I’m going to make your property invisible to those who would do you harm.” That is what privacy is. It’s having a property that is visible and accessible to my friends and family, but invisible and inaccessible to criminals, competitors, or corrupt state actors.

14. ZERO TRANSACTION COSTS

Buying or selling a piece of residential real estate costs you 6% coming and 6% going. A $2 million property costs $120,000 in transaction fees to buy and $120,000 to sell. So I ask the genie to get rid of the oppressive transaction fees and make it possible to transfer it at zero cost. You can transfer Bitcoin on-chain or on the lightning network at numbers that are anywhere from >1 to 10 basis points. No one’s got a cartel on fees.

15. UNCONFISCATABLE

If you own a farm outside of a city and that city wants to build an airport, they can seize your farm by eminent domain. They can buy it at a price of their choosing and, if you don’t accept the offer, they can just pass a law and take it. In times of war they can take it for nothing, claiming it’s for the benefit of the public. And in peacetime, they’ll take it for whatever reason they want: an airport, a road, or a public park. Maybe they’ll just take it because you’re the wrong religion or you’ve said the wrong thing.

So how does the genie solve this problem? How do you make the property immune to confiscation? Well, if you put the title to the property in your head, as opposed to anywhere else, then it becomes unconfiscatable. Assuming they’ve gotten past your other defenses, you still have the option to keep it. It cannot be seized.

16. MORTGAGE ANYWHERE, AT ANY DURATION

I talked about renting my building at any frequency, but the other right you have with property is to mortgage it (borrow money against it). If I have a building in Atlanta, I can mortgage it to banks that are licensed to do business in Atlanta or the state of Georgia. However, if someone has a cheaper mortgage on offer, but they serve a different country, I can't take that mortgage because I can't move the building. So when the property becomes teleportable, it becomes possible to mortgage it to anyone, anywhere. Any bank could become the counterparty.

Mortgages generally come in standard durations like 10 or 30 years. But what if I wanted to mortgage it at any frequency? What if I just wanted to borrow some money for the next 30 seconds? Here's a real-world example: I want to borrow money against my property, and every month, someone makes a better offer. So, one month I mortgage it to a bank in Singapore, the next month to a bank in London, the third month I mortgage it to a bank in Atlanta, and the fourth month I mortgage it to a different type of company altogether. It's a very flexible piece of property, and in essence, it's driving down the cost of my capital in the same way that, when I rent it at any frequency, I'm driving up the yield on my asset, and that makes it a better business.

17. INFINITE ECONOMIC DENSITY

I ask the genie to let me store my entire building in the palm of my hand—the white dwarf of money in this particular case. With infinite economic density, I don't need to physically manage a whole city block which my building occupies. So infinite density is more convenient and gives me more flexibility.

18. HARD-CAPPED SUPPLY

People parrot the slogan, “They’re not making any more land!” The truth is, they *are* making more land. Over the last 300 years, half of Boston was made. I live in Miami Beach; three-quarters of it was manufactured in the past 100 years. It’s all man-made; they dredged it. In Amsterdam and Rotterdam, they made land. In Dubai, they’re still making land. Given enough money, you can make land. You’d be *surprised* how much land you can make. Most people don’t think about this. So, for my last wish, I’d like a guarantee that no one can sell more than 21 million blocks of this perfect property in the universe, forever.

If you actually could get the universe to agree that there will never be more than 21 million blocks of perfect property, that’s the icing on the cake. It’s what happens to property values when the city passes a law preventing any more real estate development or restricting building more than ten floors up within city limits forever. When you restrict new property development, it dramatically drives up the value of all existing property within the city. Here we’re talking about putting a hard-cap limit on digital property in the universe for all time.

CONCLUSION

What I’ve demonstrated with these 18 wishes are all of the nagging defects in property.

Physical capital is not a simple solution.

If I’ve got $2 million to invest, do I want to own a warehouse in any city in the world, or do I want to own Bitcoin? It doesn’t take a rocket scientist to figure it out. When you buy the $2 million warehouse, you are marrying the neighborhood zoning board, you’re marrying the city, you’re marrying the county, you’re marrying the state, and you’re married for life to the country. And if you think all of those will last forever, you still have the issue of Acts of God.

Commercial real estate was a good idea for capital preservation in the 20th century, but in the 21st century, it’s an antiquated idea. It becomes antiquated as the government and the society around the property decay.

You wouldn’t want to own the most beautiful building in a country where the government and currency collapse. Look at what happened to luxury hotels in Cuba with the rise of Fidel Castro. Things peaked in 1960. Then, for the next 60 years, all those properties gradually decayed. Whatever beauty or value that was there is gone because they can’t maintain it without fixing the other economic ills.

Bitcoin is the opposite of that. Whereas commercial real estate peaked at different points in different jurisdictions over the last hundred years, Bitcoin is now just beginning to come into its prime. Every time a new Lightning wallet is shipped, Bitcoin is upgraded. Every time a new miner comes online, Bitcoin is upgraded. And each time a new regulatory guideline is laid out, Bitcoin is upgraded. Bitcoin is just continuing to improve as property. Real estate is continuing to decay as property. If we come back to the question: how does this get demonetized? The only reason a casual investor hasn’t started to shift their savings from commercial real estate to Bitcoin is that they don’t understand it yet.

You don’t understand the defects in your physical property until you see perfect digital property. Education will cause people to demonetize their real estate and gradually move it into Bitcoin.

The 24 Risks of Equities

An equity or stock is a share of ownership in a company. Some investors own equities to capture cash flows, and others own them as a store of value. If someone owns equity purely as a long-term store of value, it's competing with Bitcoin. And before an investor allocates capital to equities over Bitcoin, they must understand the differences.

As a company, you're an economic creature, and everything in the world wants to kill you. You need to understand the risks you face. To do this, start by reading the disclosure statements (10-Ks) of publicly traded companies, which contain pages and pages of risk factors. It answers the investor's question: **What could possibly go wrong if you invest a dollar in this company?**

I've been a public company officer since 1998 (Strategy's IPO). So I've been studying public company prospectuses and general business risk probably since 1996. If I were to catalog them, there are 24 key risks.

1. GOVERNANCE RISK

You're risking your money based upon proper corporate governance exercised by the board of directors and the management team. Corporations rely upon human beings, and **human action is ultimately the source of most liabilities.** The most successful equities are the ones that manage to execute a business strategy with the least amount of human dependency. The more people involved, the more decisions that need to be made, the riskier it is.

2. OPERATIONAL RISK

Every business does something, whether serving food, shipping products, flying airplanes, or running a factory. The fact that it does *something* is operational. If you fail to properly operate the aircraft, the restaurant, or the

steel refinery, the shareholders suffer. And the operation may get harder in the event of unexpected volatility in the environment.

3. STRATEGIC RISK

Throughout my career, **every competitor of mine went out of business as a result of a string of ill-advised dilutive acquisitions.** They were a weak and dying company that bought other weak and dying companies to stave off their corporate demise. And they just accelerated their decline while undermining their product.

4. FINANCIAL RISK

A company has money moving about that needs to be put in banks. At Strategy, we had money in a Brazilian bank, but the CEO embezzled it. We had money in an Argentine bank, but the government froze all assets, devalued them, and we lost it all. So, there's counterparty risk, banking risk, and credit risk. **Trust the wrong financial counterparty and they'll bankrupt you.**

5. COMPETITIVE RISK

Let's say I'm the best in the world at something. Then somebody produces a better or cheaper product than mine—I'm a restaurant and someone opens a better one, or I manufacture steel and someone does it cheaper. I can't compete, so they wipe me out. You cannot avoid competitive risk over the long term.

6. TECHNOLOGY RISK

Over time, new types of technology emerge. Henry Ford came along with the car, and nobody wanted horse buggies anymore. **The world is full of examples of companies that got wiped out by better technology** (e.g.

Xerox, Kodak, etc.). But the world is also full of companies that got wiped out because they saw the new technology coming, so they made a bad acquisition or invested obscene amounts of money to compete.

7. POLITICAL RISK

Political risk can start at the neighborhood zoning board or even with the mayor of your town. They decide they don't want your kind of business within city limits, so they zone it out. **Political risk works because a corporation has a nexus** and legal standing. Your country can take action against you. A foreign country can even take action against you, banning you from their citizens. You never know where political risk will come from.

8. FACILITIES RISK

If you have a factory, a restaurant, or a ship, then you have a risk to it. And the risk is you have to cross into some geopolitical jurisdiction where it may be either regulated or illegal to do something. We saw facilities risk with the crackdown on Bitcoin miners in China. If you had a mining operation in China, it would be hard to move the facilities. So when a city, state, or country shuts you down, you can lose everything.

9. REGULATORY RISK

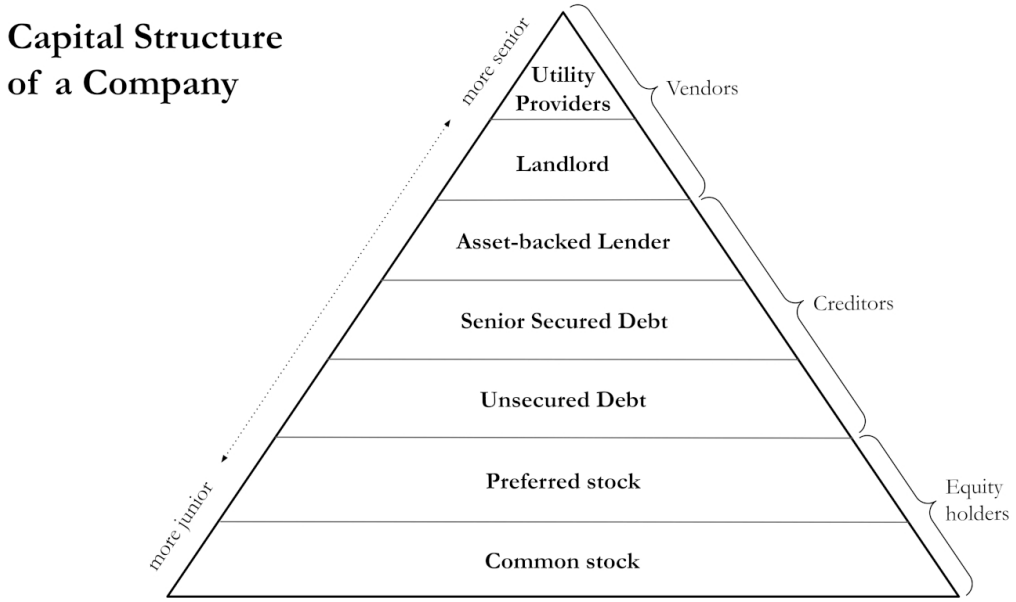
Regulators can create rules for what you do, and they can change the rules. The problem is there are millions of pages of regulations. So it's hard to comply with them, and it's even harder to know *if* you're complying with them.

10. EMPLOYEE RISK

When you're a shareholder of a company with a million employees, you could say, "This is great, I have a million employees working for me." But if you thought about it, you'd realize, "I have a million employees, and I am legally liable, civilly liable, or criminally liable for everything and anything any of them might do at any time." **More employees = more risk.**

11. VENDOR RISK

When you look at companies, in terms of who's senior in the capital structure, common stock equity holders are junior and take the first losses. Then the preferred equity holders are senior to them, because they keep their value after the common stock loses all its value. Creditors that hold junior unsecured debt are senior to the preferred shareholders. Creditors that hold secured debt are senior to them. Next are certain asset-backed lenders who can claim their assets back in the event of default. Even more senior in the capital structure would be landlords if they have the ability to evict you from your facility. But senior to them are the utility vendors: companies providing you with telephone service or electricity.



Let's say you run a Bitcoin mining operation and your electricity provider doubles the cost of electricity. Or if you're a Wall Street broker and the phone company cuts off your phones. Utility providers can shut down your

business in five minutes with no recourse. So **electricity and telecommunications are much senior than everything else.**

12. CUSTOMER RISK

Suppose your customers stop buying your products. Whatever you thought was a good business, they don't want it anymore—demand evaporates. The other part of customer risk is **if your customer/s gets too powerful.** Maybe one company becomes half of your business, so they squeeze you by ratcheting down the price. The other problem is if Amazon is your customer and they look at what you're selling and decide to white-label it.

If your customer is the government, perhaps you have to support certain politicians who, in turn, support the company. Or if it's a hostile government, they strip you of your patents and force you to sell to them at cost.

13. REPUTATIONAL RISK

You have a brilliant CEO, but it turns out that they wrote a pro-marijuana thesis in college. And today, the CEO is running a factory in a state where the governor frowns upon marijuana use. So, the CEO becomes a target. As long as there are people who govern the company, those people will have a history. The reputation of the company can be impaired through some activity. It's unavoidable.

14. WAR RISK

We know the story of DuPont Corporation, which sells explosives during a war, and grows rapidly. But what about all the companies that sold recreational cruises in the Atlantic during World War I? It didn't help them. War can destroy your business with no sympathy. **Every business that was economically wiped out by war is just collateral damage.**

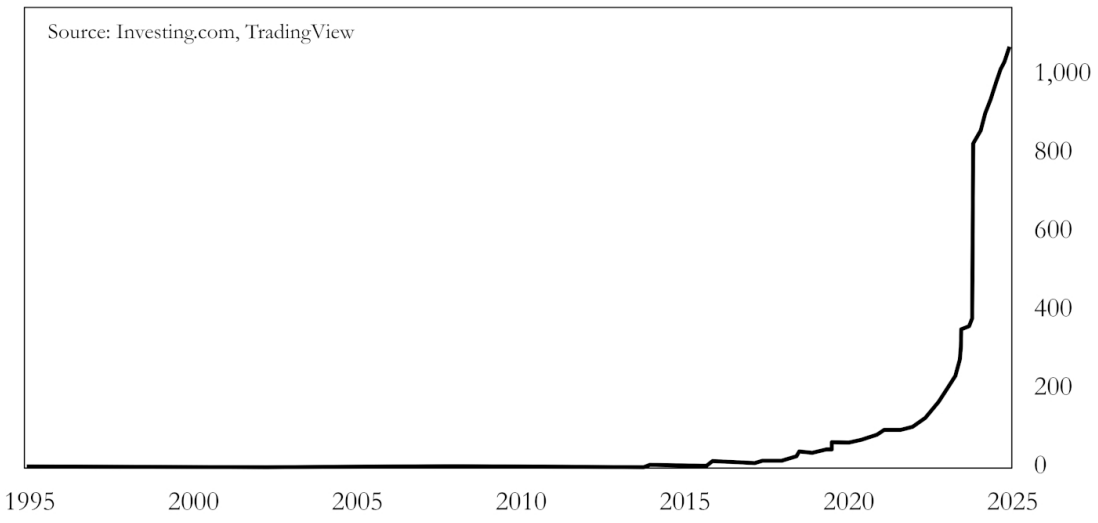
15. CURRENCY RISK

Currency is the lifeblood of the corporation. **You can't do business without trading in the currency.** It's the medium of exchange. Whatever the native currency in the market where you operate, it's a drain on the shareholders' equity. Strategy has been the leading business intelligence company in Argentina for the past 25 years, but the Argentine peso has been losing value at 20 to 40% a year. How do you extract profit from a marketplace when you're accumulating a currency that's collapsing, especially since collapsing currencies always come with capital controls?

The conventional wisdom is that if your currency loses 7% of value a year, you have to grow revenues or cash flows by 10% for the equity to hold any value. But almost no businesses can be grown at 10% a year. This causes corporations to do irrational things. One way is to lever up by borrowing lots of money and buying back stock. You accumulate debt instead of assets or equity, de-capitalizing the company. The other route is to grow the top line by buying another company. You pursue a strategy of acquisitions (see #3 Strategic Risk). Currency risk is driving all this pernicious behavior.

U.S. Dollar (USD) vs. Argentine Peso (ARS)

Official Exchange Rate



16. TAX RISK

If you do business, you risk being taxed by a city, state, or country. The taxes can vary, but if someone decides they don't like whatever you're selling, they apply a windfall profits tax, a withholding tax, or a value-added tax. They just tax you out of existence. It's difficult to deal with because it's constantly changing.

17. WEATHER RISK

Weather is a huge business driver, and there's no way to control it. Many don't even realize they're affected by it. If you own an open-air amphitheater, people don't go out when the weather is bad. If you're lucky, it's just routine cyclical weather. But if you're unlucky, a tsunami might wipe out your entire venue.

18. CUSTOMS RISK

All these cross-border trading taxes that are in place. You've got the North American Free Trade Agreement (NAFTA), which wipes out half the businesses to the benefit of the other half the businesses. So **customs and duties are weaponized through political and economic policy.** The challenge is that your competitor can influence a politician to create a customs rule to wipe you out. It's continually going on. Everybody is at war with everybody else. The problem is I can spend $1 million to influence a politician to destroy $1 billion of value for my competitor. It's unethical, unfair, and uneconomical.

19. LEGAL RISK

Every company takes on legal risk because it *acts*. Factory workers could do something non-compliant or produce a non-compliant product. **You take on liability because of the behavior of your employees**. It's never a defense for a company to say, "Well, that person just worked for us." The employee has the power to bind the company contractually.

20. TORT RISK

You will get sued if you manufacture a car that explodes after it is rear-ended. If there's any kind of product failure, or failure to work as expected, you get sued. Tort risk is when you're doing anything anyone doesn't like, so they sue you. Maybe you took a risk shareholders didn't want you to take, or improperly disclosed the risk. A company can be subjected to all kinds of lawsuits: class action lawsuits, derivative lawsuits, etc.

The reason that 10-Ks have so many pages of potential risks is that the attorneys are attempting to disclose every possible risk factor and possible way shareholders might lose money because they anticipate a lawsuit in five to ten years.

21. PATENT RISK

Everybody tries to patent everything. Everybody thinks they invented everything. **Patents are this idea that I can invent something and then prevent you from using it.** The danger is the trolls and parasitic lawyers who don't produce anything. They don't produce anything because, if they did, they could be counter-sued. So they just sit on a portfolio of patents and go about suing everybody for everything, everywhere. They will pay the politicians to pass laws to protect the tort lobby.

22. HEALTH RISK

Companies are operated by human beings. Is it a problem if the CEO is 45? What about 55? What about 65, 75, or 85? As you age, you have health problems. You become fragile and don't learn as well. You get distracted by your own mortality: if you're lying in the hospital after your second heart attack, it's more difficult for you to take a long-term view of your corporation.

23. LIFECYCLE RISK

When you're 25 and single, you have a different view of the world. When you're 85, going through your fourth divorce, and your children and grandchildren are fighting over your company, you have dynastic power struggles. These are corporate governance issues that pose a risk to equity holders.

24. DILUTION RISK

Companies that fail to manage any of the first 23 risks tend to deal with it by issuing more stock. If you're issuing a stock accretively (acquiring assets more valuable than the stock being issued), that's a good reason to do it. But if you're issuing stock and acquiring fewer assets, or simply paying off a liability, you're diluting shareholders. Over time, you get diluted either by issuance of equity or by absorbing an off-balance sheet liability that catastrophically blows up at some future point. By then, the equity is worth much less or nothing at all.

CONCLUSION

Those are the 24 key risks that every company equity holder has to accept. Every director and CEO has to think about all those risks every minute of every day. And if you're an equity holder, you're continuously thinking and worrying about them, too. You can never just buy the stock, put it in a safe, and go to sleep for 20 years because any of those risks can wipe out 100% of your assets.

People think there will always be value in equity, but there's no reason why equity has to be worth anything. If a government or policy is sufficiently critical or hostile to equity holders, it can drive the value of every piece of equity in a country to zero. A simple example is North Korea or Cuba. The value of equity all goes to zero if I outlaw private ownership.

A corporate shareholder inherently believes owning that company will outperform Bitcoin. They believe they're going to outperform perfect money! You have to manage all the risks mentioned *and* grow your working capital >7% a year (to outrun the rate of currency debasement).

> *"A designer knows he has achieved perfection not when there is nothing left to add, but when there is nothing left to take away."*
>
> —ANTOINE DE SAINT-EXUPERY

If I have a company with a product and I take away the product, the board of directors, the CEO, the facility, the brand, the nexus, the employees, the competitors, all the new ideas, the lifecycle, and the drama—what am I left with? **Bitcoin is a company where I stripped away those 24 risks.**

As people better understand the risk factors embedded in equity, the individual investor, the family office, the institutional investor, the sovereign wealth fund, the institution, and the corporate treasurer will all change their views and allocation.

Using equity and equity indexes as a store of value is less rational when you have a properly engineered alternative.

Lessons from the Walt Disney Company

I suggest people study the history of Disney. They're a great example of every kind of risk to shareholders.

- Frank Wells (the #2 person at Disney) dies in a heli-skiing accident. **Billions of dollars in damage**.
- Michael Eisner (CEO) goes to war with their most talented executive, Jeff Katzenberg. **Billions of dollars in damage** because they couldn't get along.

- Eisner survives a heart attack. He brings in a new president, Michael Ovitz, who makes decisions that create **billions of dollars of damage.**

- Eisner fires Ovitz. **Billions of dollars in damage.**

- Disney is threatened by computer animation and does a deal with Pixar, but Eisner goes to war with Steve Jobs. **Billions of dollars in damage.**

- Eisner is fired. **Billions of dollars in damage.**

- Iger is elevated. He makes expensive acquisitions: Lucas Films, Pixar, etc.

- Iger retires (due to lifecycle issues).

- Bob Chapek takes over. They face the existential threat of streaming video, investing huge amounts of money. **Billions of dollars in costs.**

- Chapek goes through COVID. The cruise lines that they diversified into get shut down—**disaster**. Disney hotels shut down—**disaster**. Disney theme parks shut down—**disaster**.

- Human resources issues pop up. Chapek gets into a big fight with Ron DeSantis over Republican politics. **A billion-dollar disaster**.

- Iger decides he wants the job back. The board fires Chapek. **A billion-dollar disaster.**

- Iger returns at age 72, and outside shareholder activists sue the board.

It is just one example of carnage and anxiety after another, for 25 years. This is the life of the shareholder. And this is a *successful* company. Every other company has a similar story.

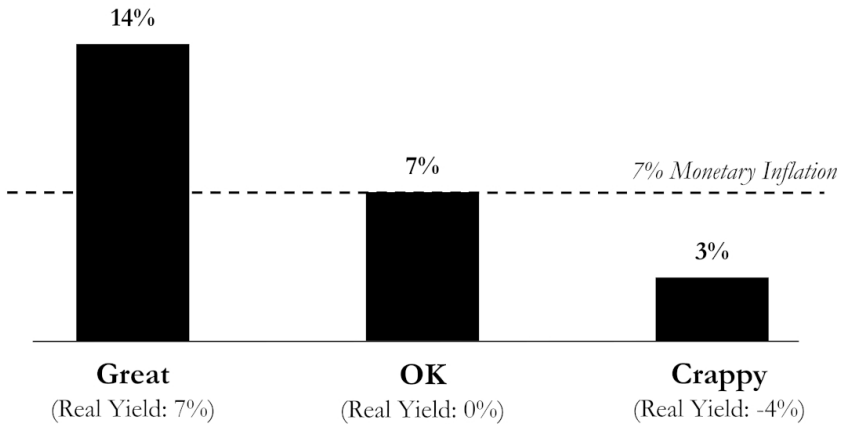
Index Funds

THE MIDDLE-CLASS STORE OF VALUE

Billionaires today own buildings, sports teams, and Picassos. These are the things the ultra-wealthy use as stores of value. The middle class uses index funds (a diversified basket of stocks). You've got the S&P 500, the Vanguard 500, and the Nasdaq 100. That's been the status quo since Jack Bogle[1] first popularized it.

Before the index fund, the middle class stored value in gold and sovereign debt. One could argue that gold fell out of favor with the middle class, and they then migrated to sovereign debt (government bonds) as a store of value. And that made sense at the time. Sovereign debt is a great store of value when yields are 14% and the monetary inflation rate is 7%. But, it's a crappy one when yields are 3% against a 7% monetary inflation rate.

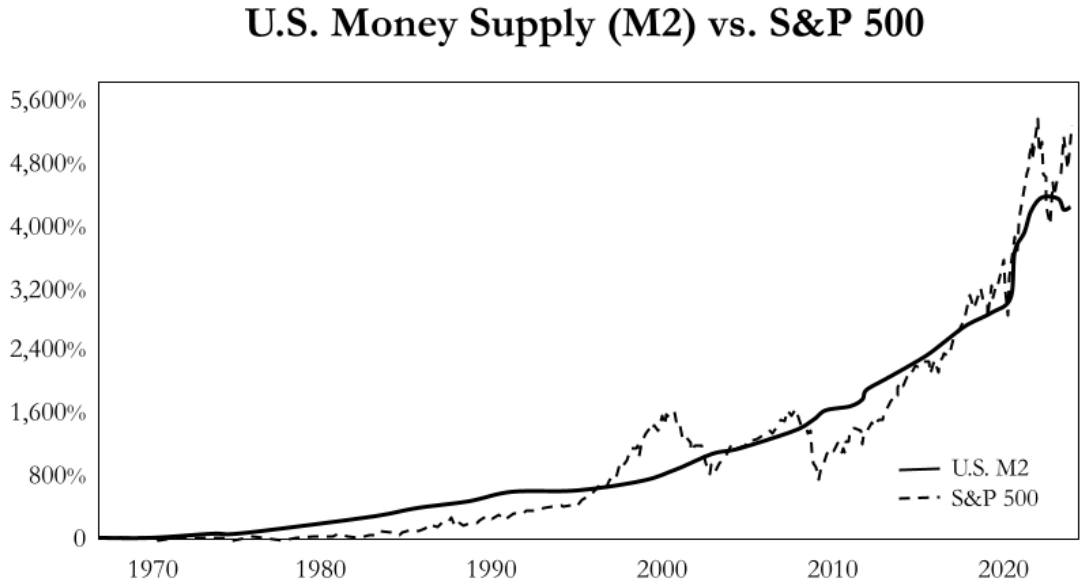
Sovereign Debt Yields vs. Monetary Inflation



When real yields on sovereign debt flip negative, everyone stampedes to the S&P 500 index.

THE MODERN BENCHMARK

For the last 30 years, the effective cost of capital has been the S&P 500 index. This is the benchmark your capital has to return to avoid getting poorer. The S&P 500 index has gone up 7% per year for the last 50 years, while the U.S. dollar currency supply has also gone up 7%. It doesn't take a rocket scientist to see that.



Source: Bloomberg L.P., National Bureau of Economic Research, Game of Trades.

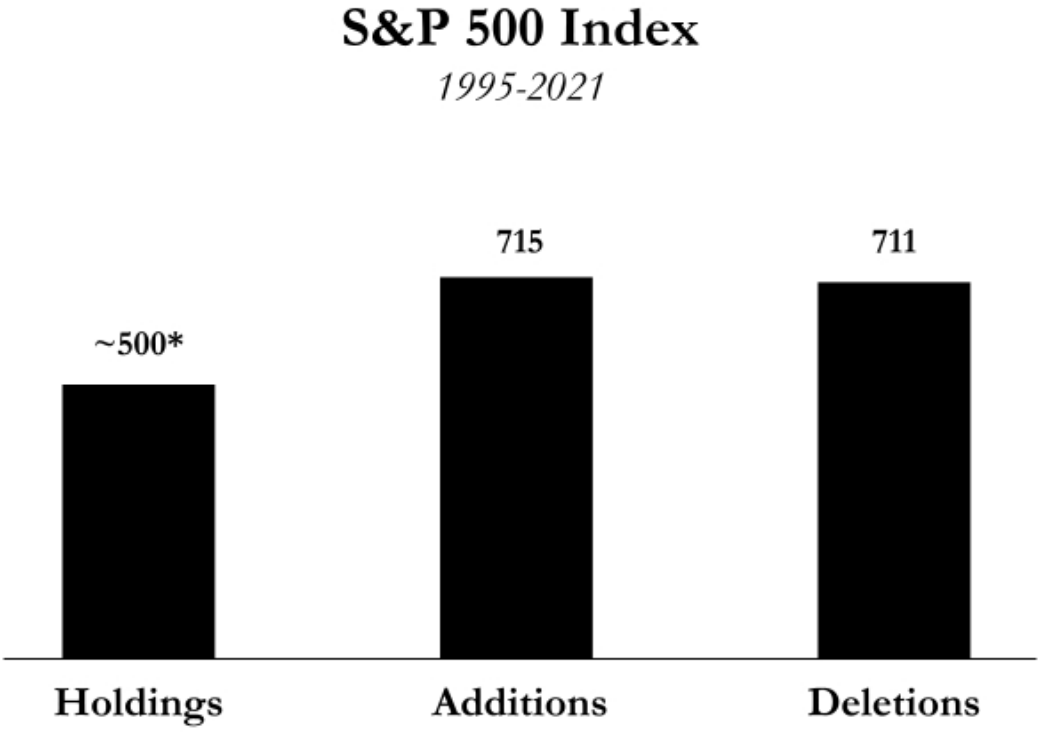
So effectively, when you buy the S&P 500, you own a basket of assets holding their value in real terms while trending up in nominal terms. And that's not awful—at least you don't get poor! But you ideally want something growing at 14%.

SELECTION BIAS

The index fund is a way to gain exposure to a basket of stocks. The S&P 500 is composed of 500 large U.S.-listed companies. But there's a selection bias. You're trusting the analysts at S&P Global Ratings[2] to select and weigh those 500 companies. They get to choose the algorithm. **You're not picking an index; you're picking an indexer.**

The real problem is your index has an *adverse* selection bias. They're randomly throwing out the losers and putting in the winners for marketing purposes. If they didn't adjust the index, you'd find that 95% of included companies would eventually go bankrupt. Just as there's no honest CPI metric, there's no honest analysis of the S&P 500 index returns (because it's not statistically maintained).

Proponents will argue, "Well, you can't statically maintain the index because the companies come and go." OK, then give me an algorithm to establish an index immune to human corruption.



CORRELATION TO LOCAL CURRENCY

Try this thought experiment: construct an index of the top companies in every country. Take the top 100 companies in Zimbabwe, South Africa, Japan, Germany, Argentina, Venezuela, the U.S., the U.K., France, Norway, Russia, etc., roll the clock back to 1900, and check how each index has performed against gold or Miami Beach real estate.

Ninety-nine percent of indexes go to zero because every index is correlated to the currency.

There is no index you can construct in South America that won't lose all your money in 50 years. Any index you construct in Germany, post-WWI, loses nearly all your money. Then, after WW2, the remainder goes to zero! So you get wiped out twice. You get wiped out at least once in Japan, three times in Russia, and five times in Argentina. You don't quite get wiped in the U.S. (a politically adjusted index), but it's because they're manipulating the CPI on the dollar and then the S&P index.

FOUR BIG ASSUMPTIONS

When you put your money in the S&P index, there are **four assumptions** you're making:

1. The S&P indexer will be **virtuous** for the next 100 years.

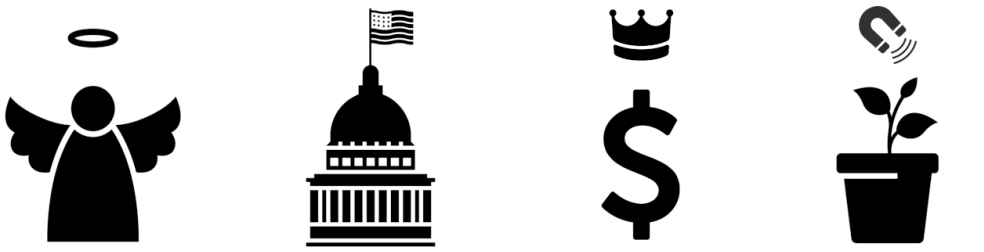
2. The United States will be **successful** for the next 100 years.

3. The U.S. dollar will be the **dominant** currency for the next 100 years.

4. You and your heirs can keep your assets **domiciled** in the United States for the next 100 years.

If all of those assumptions are correct, you might get something that loosely tracks a market basket of equities. But, I don't believe any study has proven that stock picking (or index picking) can outperform the collapse of any currency.

S&P 500: The Four Big Assumptions



Virtuous Indexer | Successful Country | Dominant Currency | Uninterrupted Domicile

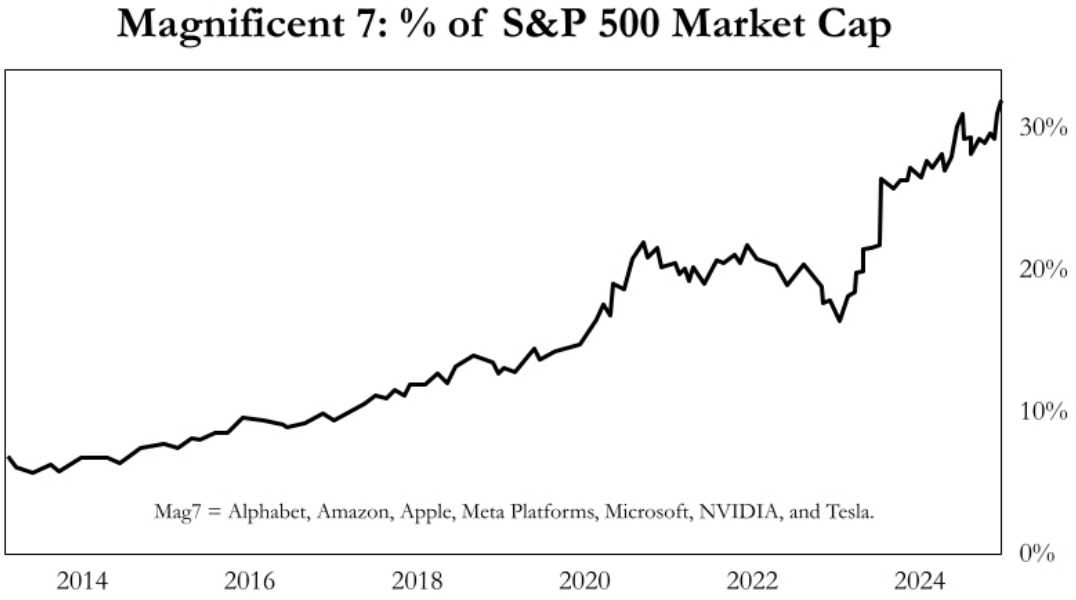
MONEY MANAGERS

You could hire a money manager to run a hedge fund for you. They're attempting to mitigate these risks. But now you've got the counterparty risk of trusting a money manager, and you'll pay them 2% of all your assets every year and 20% of any gain (when you agree to a two and 20 contract). If you give $1 million to a money manager, statistically, they'll take 20% of your money ($200,000) over a decade through the management fee alone. And 95% of these hedge funds *underperform* the S&P index. You're getting destroyed. So that doesn't work over a long period.

THE MAGNIFICENT SEVEN

Nearly all the returns in the S&P 500 come from just 1% of the companies. Competing in the modern world is becoming increasingly difficult if you're not a digital monopoly or lack the overwhelming force and power of Microsoft, Apple, or Amazon. So, the question for investors is, "Do you

want to hold the seven companies in your portfolio to get all the returns, or the other 493 that return nothing?"



Sources: LSEG Datastream, Yardeni Research.

This is not a value judgment; the people working for those 493 companies probably worked just as hard, got paid less, and took an extraordinary beating trying to fight against a digital wave.

Conventional diversified portfolios are underperforming the Magnificent 7, and nearly all alternative investments are either illiquid or don't scale. Every family office and institutional investor struggles with this. It's the subtext of the daily discussion on CNBC: "What am I supposed to do other than just sit in the Magnificent 7 and wait?"

MISALIGNED INCENTIVES

The world is over-educated in equities and ETFs while under-educated in sound money and Bitcoin. I was recently at a conference with hundreds of sophisticated financial professionals explaining to me one of their thousands of mutual funds and ETFs. **In 30 years, I've never had a person in a suit show up to my office and pitch me on a simple investment strategy like buying a high-quality property and holding it forever.** The

same way, I've never had a doctor pitch me on fasting. Why? Because nobody gets paid. The guy in the suit doesn't get paid. The CEO doesn't get paid. The doctor doesn't get paid. The pharmaceutical company doesn't get paid. Ultimately, it's up to ethical pro-bono educators to tell the world why things like living healthy or owning Bitcoin are imperatives.

---

1. ↩ John Clifton "Jack" Bogle (1929–2019) was the founder and chief executive of The Vanguard Group.

2. ↩ Previously known as Standard & Poor's.

Hierarchy of Capital Assets

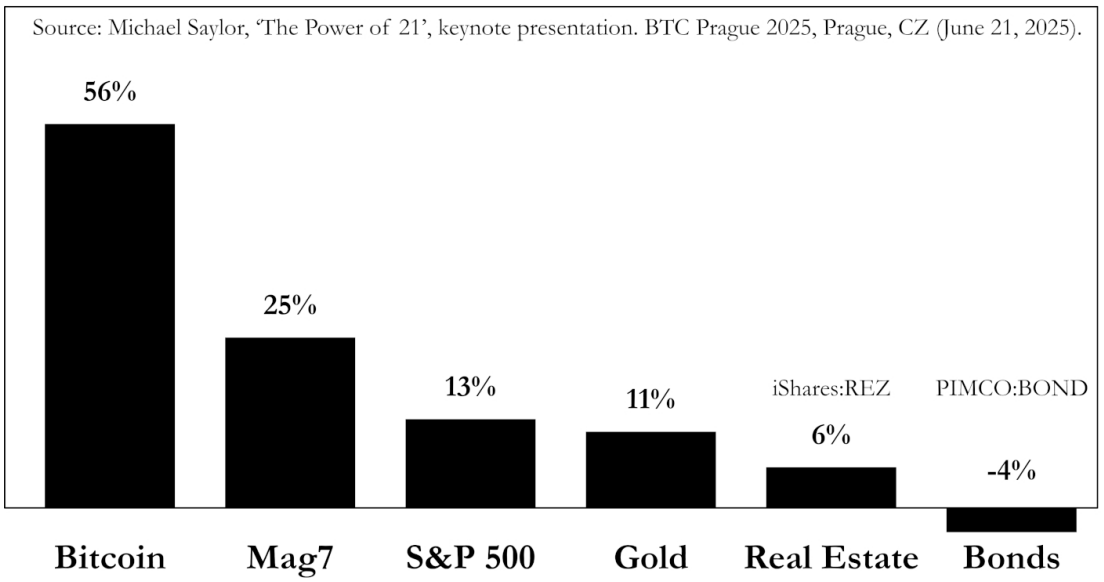
The richest families in the world got rich because they bought or created assets and held them forever. They don't generate income. They never paid capital gains. They own appreciating assets, and they borrow money against them. There's no tax on the money you borrow, so there's no income tax. This is how all the wealthy New York families built their fortunes in the 20th century. They borrowed as much as possible, at an interest rate lower than the monetary inflation rate, and purchased buildings. The bankers exist to issue loans against the building.

The way that the world works is smart people designate certain assets as capital assets and other assets as currencies. They maintain negative working capital in the currency and positive working capital in the capital asset. This is how you navigate an inflationary environment. The greater the inflation rate, the more important this strategy becomes.

Think of the wealthiest people in the world: Elon Musk, Jeff Bezos, and Mark Zuckerberg. What percentage of their wealth is U.S. dollars? It's not even 1%. Jeff Bezos is worth $200 billion. Do you really think he has $2 billion in cash? No. There is no wealthy individual that would ever claim that the majority of their assets are held in U.S. dollars. They're holding capital assets, which are typically split between three things: bonds (corporate or government), real estate (commercial or residential), and equity (private or public).

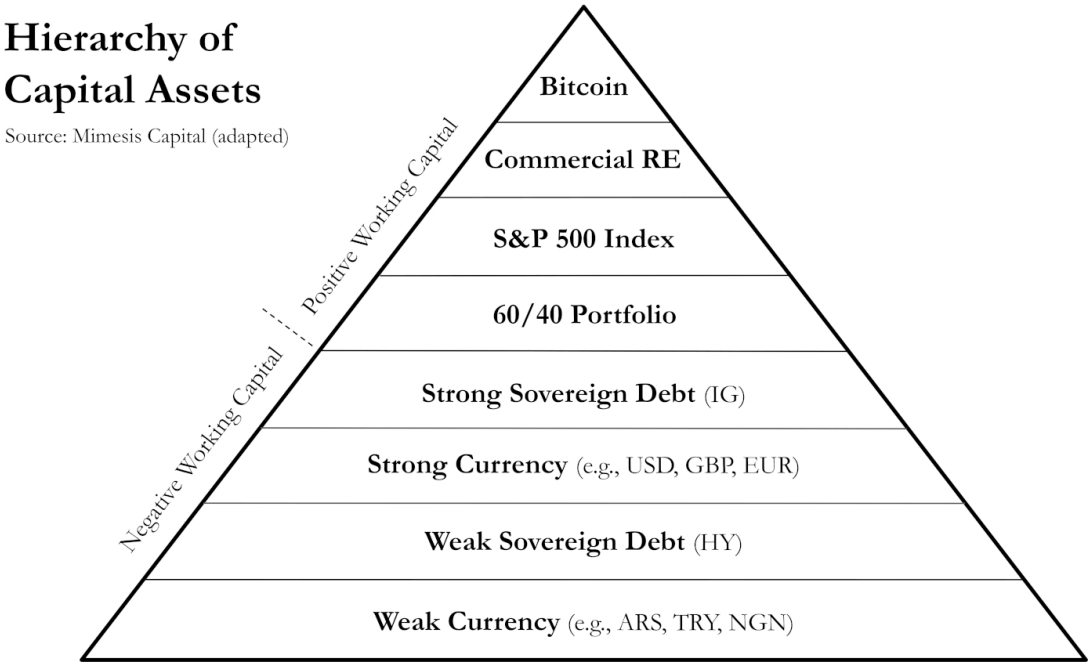
Asset Class Performance since Strategy adopted Bitcoin

August 10, 2020 - June 18, 2025



In the 21st century, the old rules still hold. But now there's something called digital capital, which is global property, and it's evolving at a much more rapid rate than the 20th-century property. Now, **you don't get to decide whether the U.S. issues more currency or if Bitcoin becomes legal tender**—those are governmental decisions. But **you get to choose how to allocate your portfolio.**

The best capital asset is Bitcoin. The best conventional capital asset is a building somewhere like New York City or Paris. After that, it's the S&P index (growing in dollar terms, but flat in real terms). Then it's a 60/40 portfolio (60% stocks, 40% bonds). Next you have strong sovereign debt (i.e., U.S. Treasury bills) that will drain your economic energy at 7% to 10% a year. After that, it's a strong currency like the U.S. dollar. Weak sovereign debt (e.g., Argentine) is below that, bleeding out at 30 to 40% a year. And, the worst capital asset is a weak currency like the Argentine peso.



Bitcoin is the only asset that exceeds the cost of capital over the long term. Another way to say that is that everything else is dilutive and destroys capital and wealth.

TREASURY, WE HAVE A PROBLEM

I was in despair before I found Bitcoin. I had worked for a decade, attempting everything under the sun, and could not get ahead. I wasn't stupid; I was the same person. At some point, you realize the system is rigged against you.

If you wanted to harm a person, you'd give them toxic water. If you wanted to harm a company, you'd give it toxic capital. This is why many companies fail within a decade. If you build a company on an asset with a useful life of ten years, the company will only last ten years. So, the lifespan of companies is shrinking because they're sitting on a defective capital asset.

Just as you and I need to store our economic energy, so too do corporations. There are 50,000 publicly traded companies in the world that need to store their economic energy. Currently, they're using sovereign debt as their

primary capital asset (or treasury asset). The problem, of course, is that the asset is collapsing in real terms. For example, if U.S. Treasury bills give you 3% after tax while the cost of capital is 13%, you lose 10% of your capital every year. A company with $5 billion in bonds on its balance sheet will bleed $500 million in year one. They're destroying as much shareholder value with their balance sheets as they are generating through operations.

The most pernicious thing you can do to someone is convince them they're not smart enough and failing because they don't work hard enough. Today, all operating companies are being decapitalized because they cannot have more than 40% of their balance sheet in securities[1]; the rest has to be in cash or government treasuries. However, everyone's smart enough to realize that treasuries are dilutive to shareholder value, so these companies operate with negative working capital. As a result, they buy back their stock, pay dividends, and borrow money to expedite debt repayments or expand operations. Look at Meta, Apple, Google, and Microsoft—all of them have done stock buybacks. By contrast, the endowments of Harvard and Yale, which maintain positive working capital, enjoy greater longevity.

In the future, people will recognize the necessity of digital capital on their balance sheets, just as they do with electricity in their homes. **Companies with Bitcoin on the balance sheets will outlast, outperform, and outlive their competitors.**

1. ↩ Section 3(a)(1)(C) of the Investment Company Act of 1940.

PART FOUR

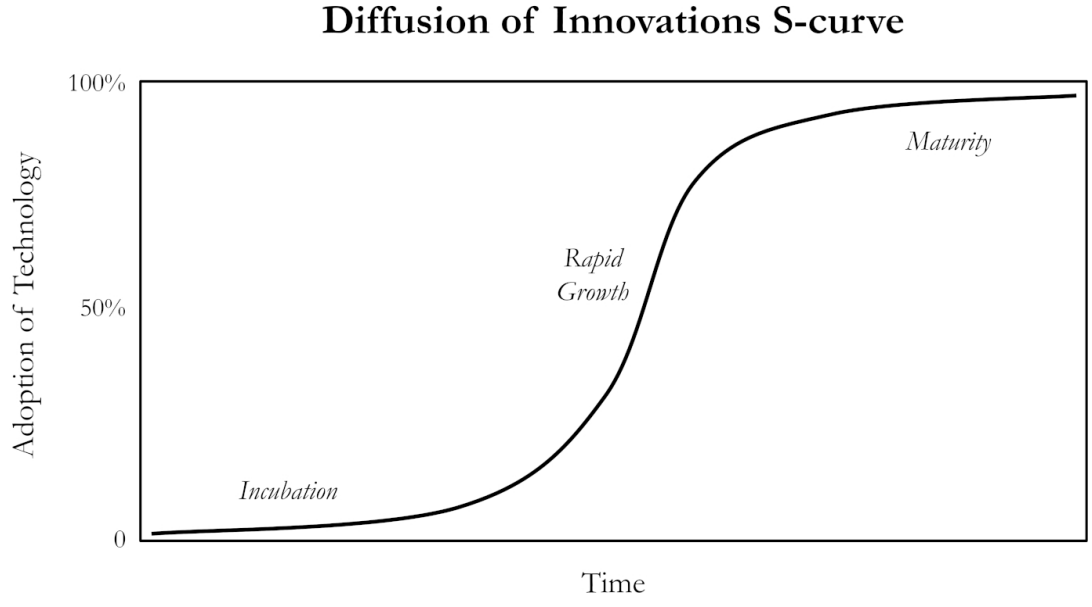
NETWORKS

Lessons from The Mobile Wave

THE PACE OF TECHNOLOGICAL REVOLUTIONS

> *"The Agricultural Revolution took thousands of years... The Industrial Revolution [took] a few hundred years. By simple extrapolation, we might expect that the Information Revolution will require tens of years to achieve pervasive changes in our lives..."*
>
> —MICHAEL SAYLOR (*The Mobile Wave*)

At MIT, one of my degrees was in the history of science. I studied the structure of scientific revolutions and different types of technology diffusion. Certain things popped out at me. You'll often see an S-curve, where something starts slow, accelerates, and finally reaches diminishing returns (at which point it's not an interesting technology anymore).



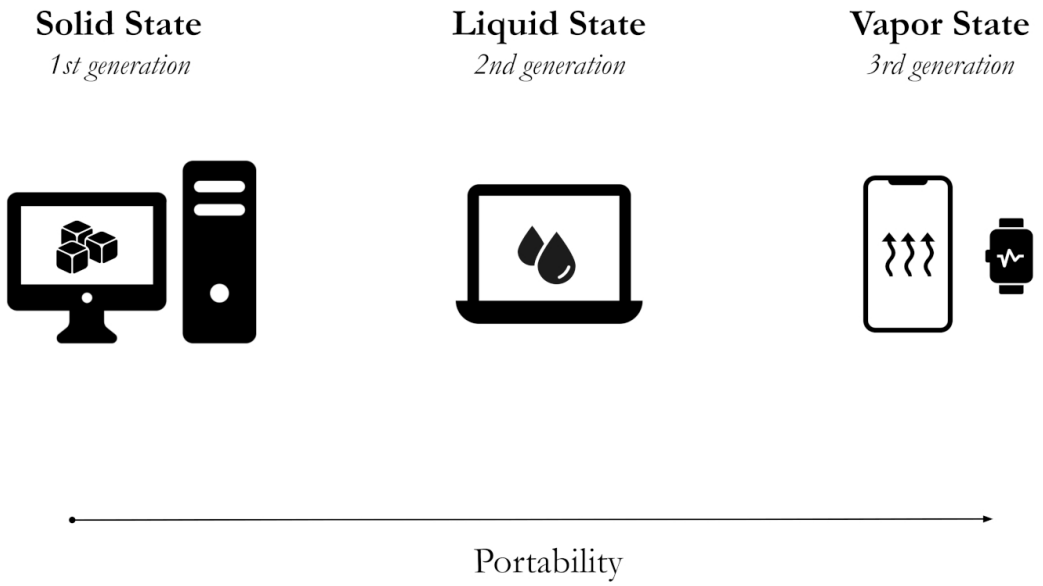
But, one of the lessons of history is that it's hard to know precisely *when* the acceleration will start (you could be off by one year or 100 years). But

once it does start, it's very difficult to *stop*. When a nuclear reactor comes online and the chain reaction begins, we call that "criticality." Bitcoin has now reached criticality. The network has come to life, the power is flowing, and there's no off switch—it is unstoppable.

THE EVOLUTION OF SOFTWARE: FROM SOLID TO VAPOR

My other degree at MIT was in aeronautical engineering and spaceship design. What we think of as modern innovations (i.e., airplanes, cars, railroads, and radio) simply had advanced engineering materials and maths in them.

I became enamored by the thought of software leaping off a computer and onto a handset. The first generation was solid-state software, which ran on a mainframe in a back office. Then came liquid-state software, which you can put on a laptop and carry around. The vapor state is when the software runs on the phone in your pocket or the watch on your wrist. The future was going to be something different if software were around us 24/7/365.



DOMINANT DIGITAL NETWORKS

I wrote *The Mobile Wave* in 2012. One of the observations in the book was that software networks are dematerializing everything you can hold in your hand. You went from taking photos on a Canon camera and storing them in a shoebox to Facebook and Instagram on your iPhone. It wasn't worth ten times as much, it was worth 1,000 times as much! The world was going to change. These networks were going to destroy 15,000 competing companies because nobody in history could ever upgrade or ship a product for zero variable cost to the entire planet. And yet, that's what Google does. That's what Facebook does. That's what Apple does. And that's the part of Amazon that works well. The conclusion was to buy Apple, Amazon, Facebook, and Google.

I wrote the book. Nobody read it.

I took $50 million of my own money and bought Facebook, Apple, Amazon, and Google stock. I rode that wave and turned $50 million into $500 million. What's the trick? You find the dominant digital network that's crossed $100 billion in market capitalization. You buy it when it's ten times bigger than the next thing, while everybody tells you you're stupid. You hold it and wait.

If you buy too soon, you might hit Blackberry, MySpace, or Yahoo. But **after $100 billion, the market has decided**. Apple is the winner, Google is the winner, Facebook is the winner, and Amazon is the winner.

The Road to $100 Billion

	Founded/ Created	Date Reached $100B	Years to Reach $100B
Google *(Alphabet)*	Sep 4, 1998	Oct 2005	**7**
Facebook *(Meta Platforms)*	Feb 4, 2004	Aug 2012	**8.5**
Bitcoin	Jan 3, 2009	Nov 2017	**8.8**
Amazon	Jul 5, 1994	Jul 2011	**17**
Apple	Apr 1, 1976	Aug 2007	**31.3**

Source: TradingView, CoinMarketCap.

The winning formula for the past 10 to 15 years has been to find a digital dominant network that dematerialized some fundamental thing.

SELLING THE WINNERS TO BUY THE LOSERS

When Apple released the iPhone in 2007, it was a toy. There was no cut and paste or app store. By 2009, that was no longer the case; it was a business tool. I remember lecturing Wall Street guys about Apple in 2011. They said: 'We know you love Apple and think it will beat everything, but if the stock goes up too high, our idea is to sell it and buy other computer companies to diversify your portfolio." They would actually say that to me! The problem with that strategy is that if Apple dematerializes all these other computers, you won't *need* any other companies. Apple's going to eat every competitor. Every time you diversify, you'd be selling the winner to buy the losers.

We got to a point where Apple made 150% of all the profit in the mobile phone business. This means that, collectively, every competitor lost half as much as Apple made, so that they could compete against them. The same

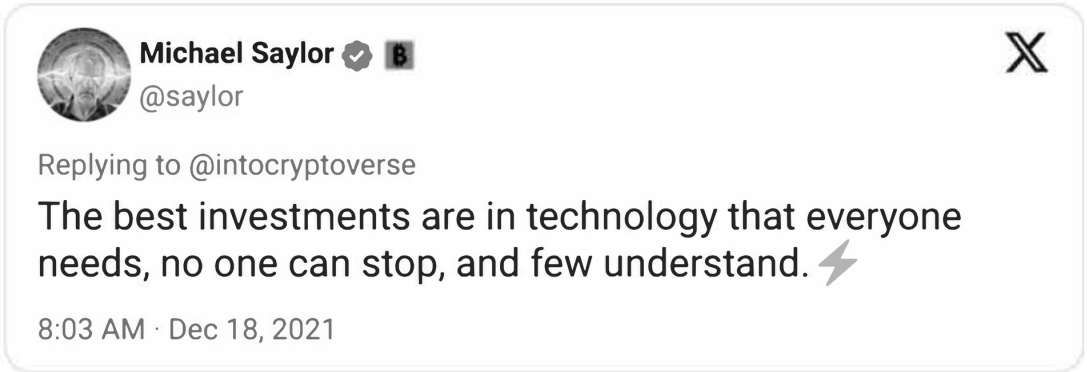
has happened in retail. Amazon won, Walmart kept up, and the next 2,500 retailers lost.

Amazon was the winner in 2013 when it was trading at $300. Everybody on Wall Street said, “What is this stupid company? They don’t make any money! We aren’t buying it.” But *you* could have bought it. You could have bought all those things, and you would have gotten a 10x to 20x gain. You just had to wait until it gradually dawned on the 99% of the world that disagreed—the cynical, skeptical, and ignorant—that Google is an information network, Facebook is a social network, Apple is a mobile network, and Amazon is a retail network. It made me successful as an investor, but my company didn’t invest in any of it.

Dominant Digital Networks

Retail Speech Information Social Mobile

What happens when you think about what was *not* digitally transformed during the first mobile wave? **I swore to myself that if I ever saw this again, I wouldn’t write a book; I would simply buy as much of that thing as I could personally and corporately. Then I’d just tweet about it.**



Monetary Networks

CONNECTING THE WORLD: A WORTHWHILE COST

Networks are infrastructure that moves things from A→B. Any significant network will cost a lot to build.

Electricity networks cost a lot. Ships and ports cost a lot. Aqueducts cost a lot, but take them away and everybody in ancient Rome dies. Railroads cost so much that they used to bankrupt everybody, but they connected the country. There's a one-time fixed cost to build a railroad and a recurring cost to maintain it. But, once you have a properly maintained railroad, the cost of moving tons of cargo decreases, not by a factor of 10 to 100, but by a factor of 10,000 to 100,000.

The very first Intercontinental jet cost hundreds of millions of dollars. The next one cost much less. Thirty years later, the cost of traveling between New York and Tokyo has reduced to a few hundred dollars. Who would claim that's too expensive? The person with the steamship, that's who! Just as the person selling the ox cart would say the automobile is too expensive, and the person selling coal would say oil is too expensive.

The people who say Bitcoin costs too much are the crypto promoters pushing their token and desperately grasping for relevance. There's a profound investment of capital, human intellect, and labor to construct anything with some degree of utility.

> *"If a new thing is technically feasible and is far more economical than the old thing, then the new thing will happen—sooner or later."*
>
> —MICHAEL SAYLOR (*The Mobile Wave*)

THE DIGITAL RAILROAD[1]

There's around $50 billion of hardware operating (or *capitalized*) in the network in 2025. Miners are using $7 to $10 billion a year of electricity and getting increasingly energy efficient. Let's say it's $25 billion per year in hardware and electricity to run the Bitcoin mining network. It's like spending $25 billion on a railroad that supports $2 trillion in assets and moves tens of trillions of dollars of value a year. The Bitcoin network is almost infinitely scalable at this point. The same $25 billion of annual expenditure could support 10x the current transaction volume, transaction value, and asset value. When you look at Bitcoin in that context, it doesn't cost that much.

THE THREE PROBLEMS

The world's dilemma is that it needs both a monetary asset *and* a monetary network with integrity.

In the age of gold, the monetary asset was gold bullion (a bar or coin), and the monetary network comprised rail and shipping. That was the old world. The last hundred years have been an intermediate period where the primary monetary asset is the U.S. dollar and the network is a system of central banks. Now the world wants a new monetary network. But there's an economic problem, a technical problem, and a political problem.

The **technical problem** is that eight billion people need the ability to conduct transactions 10,000 times a day with each other across 50 billion computers.

You need money that moves at the speed of light with final settlement in a millisecond. You don't have that with central banks, correspondent banks, or credit card networks.

The **economic problem** is that all fiat currencies are losing purchasing power.

The world reserve currency (U.S. dollar) has been collapsing at 7% a year for the past century, and the rate is accelerating (creating trillions of dollars worth of economic damage). While we managed to live through that, I don't think we can survive 20%.

Think about the dysfunction that occurs when banks freeze up and the currency collapses. How much research, innovation, and creativity in industry is taking place? Africa is a good example. You could say there's been dysfunction in Africa for hundreds of years, with one of the major sources being a lack of a monetary network with integrity. In most African nations, if I gave you a billion dollars, how long would the money remain there? And would it be gainfully invested or dissipated? It's like someone's pumping blood into your arm, but you have an open artery and it's flowing straight out.

Finally, the **political problem** is that nobody trusts anyone.

We saw this in Britain during the 2022 gilt crisis. They prevented the system from correcting to a fair interest rate which would have benefited rational actors. Instead, they took tens of billions of pounds from one group and gave it to another that was politically connected. Then, they masqueraded as virtuously protecting the system from a meltdown: "Punish the wise, reward the foolish."

Most of these monetary networks are continually chasing perfection. As a result, they're willing to accept all sorts of ineffable, non-quantifiable risks they don't understand to pursue a tangible benefit they can see. So, avoiding a £50 billion loss by pension funds who had taken risk is used to justify inflicting damage on everybody else.

The solution is to educate those who are objective and explain why civilization is based upon the monetary network. And that monetary network must be properly architected and independent of any country or company. Because no country trusts another, and no one can trust any company or institution over generations.

THE PROTOCOL FOR PROSPERITY

Protocols are codified standards or rules that enable cooperation. The English language is a protocol, base-10 math is a protocol, and TCP/IP is a protocol. The ancient Egyptians had protocols to build the pyramids—standard sizes, widths, weights, and measures. If everybody laid down railroad track of a certain width (gauge) and you designed a train car of a different width, it's incompatible with the network. So protocols matter a heck of a lot.

Satoshi created a protocol for prosperity—21 million coins, a capped block size, 10-minute intervals, SHA-256 hashing, etc. If Bitcoin were a nation, the protocol would be the body of laws governing it. The protocol has no statute of limitations, so for all practical purposes, embedding something in the protocol is akin to enacting a law that could last for 1,000 years. That protocol lives on in the software.

When I get asked about threats like quantum computing, the point I like to make is that English is a protocol—if you upgrade the software, you still keep the English language. Base-10 math is a protocol—if you upgrade the software or rebuild the computer, you retain base-10 math. Similarly, Bitcoin is a protocol—you may change the hardware or software, but the protocol remains.

The Bitcoin protocol is straightforward: intelligent people worldwide want to preserve their money forever. They're buying a percentage of all the money that will ever exist. At what point would you not want to own that?

INTEGRITY ACROSS SPACE, TIME & DOMAIN

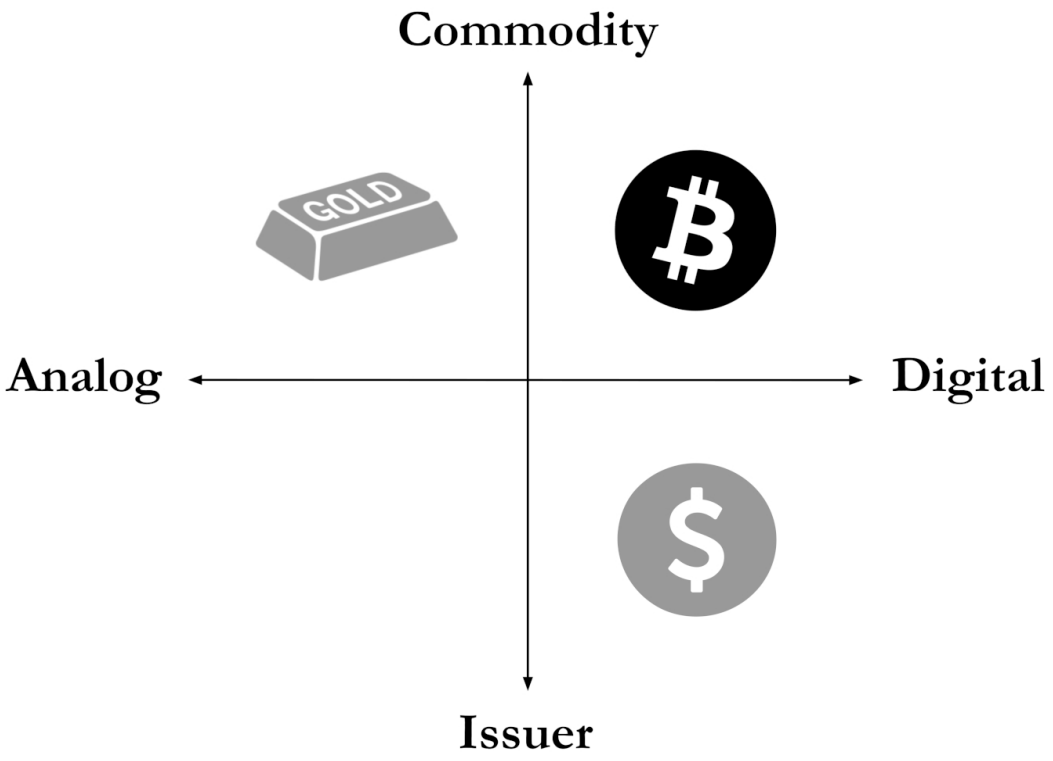
Bitcoin is solving the problem of monetary integrity across **space, time**, and **domain**.

- Space: I can transact everywhere on Earth, billions of times an hour.

- Time: I can hold something that will last 10,000 years without impairment.

- Domain: millions of companies in a hundred countries can trade across 10,000 political jurisdictions and agencies.

To create something that endures for 10,000 years, spans 100 million companies, 10,000 cultures, and 10,000 regulatory domains, and moves at the speed of light, it must be a **digital asset without an issuer**.



---

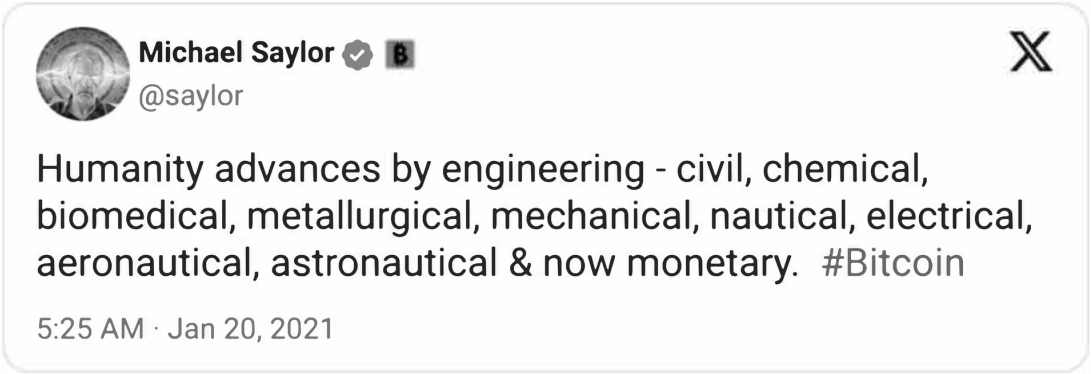
1. ↩ Dollar values updated by the editor to 2025 from 2022.

Engineered Money

AN ENGINEERING BREAKTHROUGH

The engineer's credo is to look at their surroundings and use their intellect, available materials, and learned techniques to construct a better world for those they love.

It means choosing not to be a victim of circumstance, but instead endeavoring to change those circumstances through action.



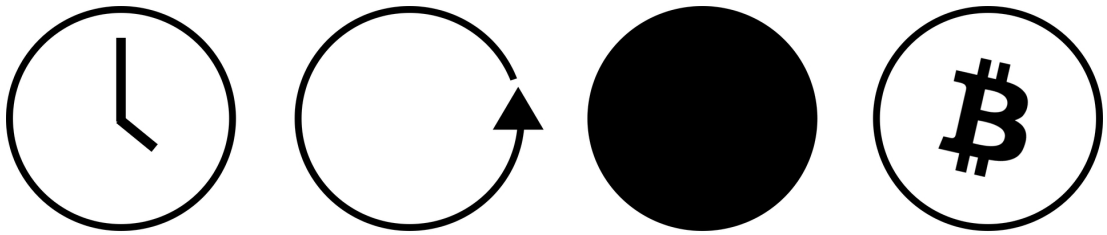
We've always thought of money as being in the domain of those who could apply the most force (i.e., governments). But now it's moving into what is scientifically proper. Is something considered money because the most important person in the village says so, or because the best engineer designed it as such? Every government has *created* money, whereas Satoshi *engineered* money—a solution premised on zero power loss.

A CLOSED SYSTEM

No one has ever designed a pneumatic or hydraulic system with a leak. Your swimming pool doesn't work if it has a leak. If there's a leak in an airplane's fuselage, it explodes. You don't try to cross an ocean in a ship

with a leak. You don't have leaks in a nuclear reactor. The idea of a closed system is basic to every engineering freshman.

A closed system is one where the mass within the system cannot leave or be added; all you can do is inject energy. Bitcoin is the classic textbook example of a closed system. There are 21 million coins. You can't add or remove any. There's no inflation.

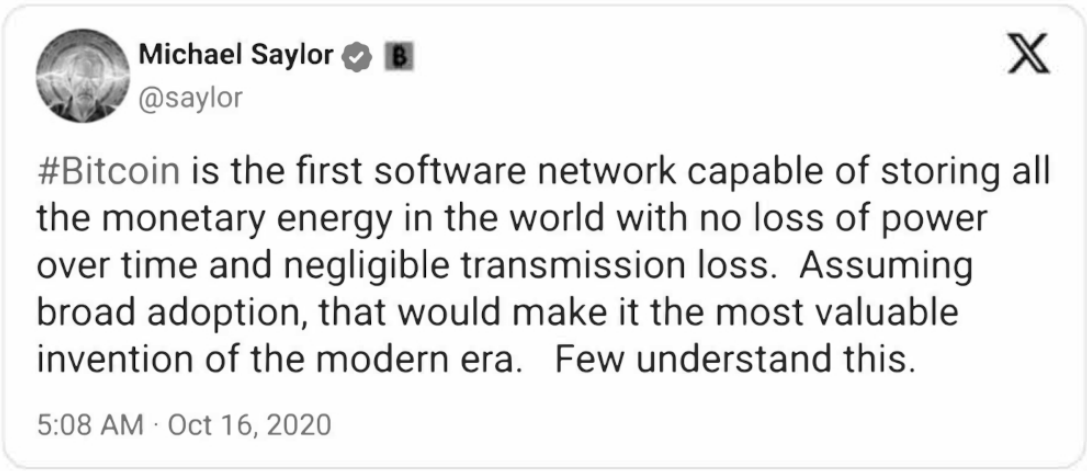


24hrs **360°** **100%** **21,000,000**

The way to understand Bitcoin is to recognize that everything you learned about money in economics throughout your life was pseudoscience.

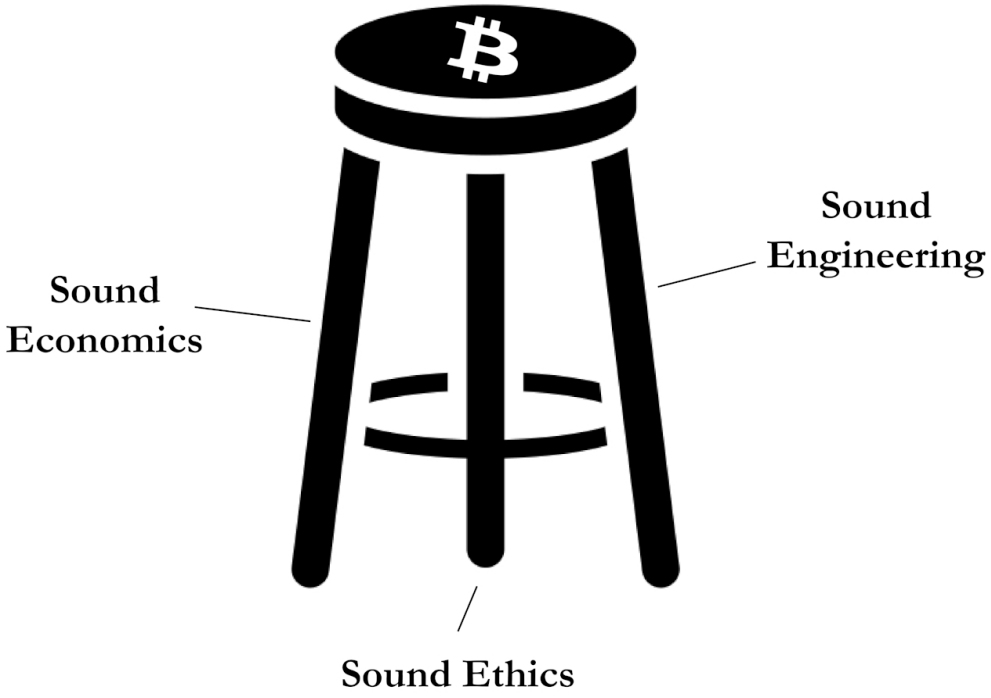
It's a completely foreign idea to have a financial instrument that is scarce and capped. You can issue more stocks and bonds, mine more gold, and print more fiat currency. So, you can't blame the economists, politicians, and investors for lacking the correct mental model to understand Bitcoin, for we hadn't yet discovered perfect money.

I can put $100 million of monetary energy into the Bitcoin network, and it will store this energy for as long as you can imagine with no power loss. That's the genius of it.



A STABLE SYSTEM

You can think of Bitcoin as a stool being stabilized by three prongs: sound ethics, sound economics, and sound engineering.



Sound Ethics: Here's the road map for an ethical launch of a decentralized digital commodity and open protocol for anything: create it, give it away, and go away.

Prometheus gave us fire; he isn't taking 10% of the revenues from every use of fire and suing you for patent infringement a million years later. Consider how many corporations and governments in the world today offer a solution, then stick around to benefit from it.

Bitcoin sets an example; **Satoshi created a way, gave it away, and then went away.**

Sound Economics: We use math for the same reason we use steel; it doesn't deflect.[1] For example, the number nine doesn't change from year to year. Nine is always nine. No one gets to redefine it, and there's no debate over it. This is why every machine and computer in the world operates on math. If you changed the value of nine to nine and one-quarter, it would destroy the machines.

Bitcoin is an elegant idea: a fixed number that cannot be changed—21 million. It's not 21 million and counting, nor 21 million unless we vote otherwise. It's simply 21 million. Forever.

In theory, you could create a digital commodity that inflates 5% per year, give it away, and disappear. But, it'd be defective because it will just keep inflating. A fixed number that nobody—corporation, politician, or movement—can change or corrupt is the breakthrough.

Many good philosophers and Austrian economists may have had the right idea, but the technology was not up to implementing an ideal notion. Just as you could be a great doctor, but prior to antibiotics, microscopes, and germ theory, there was a limit to what you could accomplish. **Only computers could deliver Bitcoin. It couldn't have been done in an analog world.** You couldn't execute perfect money until you had a combination of modern technologies: the internet, computers, semiconductors, and cryptography. Gold is analog money. Fiat currency is digital credit. Bitcoin is the first digital money.

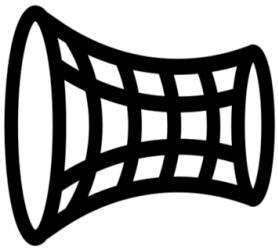
Sound Engineering: When a technology or instrument gets sufficiently good enough, it breaks the paradigm. It could start with grinding glass into optics to observe very distant objects. Until the telescope, we couldn't see the moons of Jupiter. Which meant we couldn't figure out Kepler's laws of

planetary motion, and we would never have determined that the Earth revolves around the Sun. So an instrument allows you to prove or break a paradigm. This paradigm shift led to Newton's laws, which led to calculus and the calculus of variations, transforming the entire modern world.

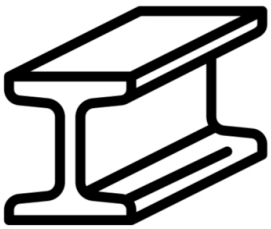
Isaac Newton gave us calculus: engineering-grade mathematics.

Andrew Carnegie gave us steel: engineering-grade metal.

Satoshi Nakamoto gave us Bitcoin: engineering-grade money.



Calculus



Steel

Bitcoin

Bitcoin was built by someone who understood engineering because it's an adaptive control system; there's a target block time and a first-order feedback loop (the difficulty adjustment). How long have those been in existence? Every properly constructed machine has a first-order feedback loop: steam engines, automobiles, thermostats, ballistic missile systems, and all electrical engineering systems. Satoshi was a systems engineer.

Bitcoin is a balanced, stable, engineered system. You achieve that by combining energy via electricity with something thermodynamically scarce, along with hardware, semiconductors, software, and cryptography.

When you put it all together in an open protocol, you have something stable that spreads virally.

---

1. ↩ In engineering, deflection refers to the change in direction of an object due to an external force or interaction.

Digital Capital

THE DIGITAL TRANSFORMATION OF CAPITAL

Understanding Bitcoin requires a return to first principles. Etched in the great court of MIT are the names of Darwin, Newton, Maxwell, Curie, Archimedes, Pythagoras, and many other mathematicians and scientists who gave us the modern world. Most human progress is based on revolutions around energy.

For the last 30 years, we've transformed records, VHS tapes, photographs, books, and letters into digital information. It's created enormous value. But the truth is, the next 30 years of digital transformation will be an order of magnitude more important than the last 30 years. We have analog money, analog bonds, analog real estate, analog equity, and analog art. The problem we've always struggled with is our primary capital assets are all impaired by physical constraints. The physical constraints lead to political constraints, entropy, fragility, and risk. The extraordinary opportunity here is the digital transformation of capital. Today, **0.1% of the world's capital is digital; 99.9% is not.** We're very early in the journey.

PROOF OF WORK

This is not just the digital transformation of information—it's the digital transformation of energy. And the best way to do that is with proof of work.[1]

Bitcoin's proof-of-work architecture is unique because it creates a decentralized asset linked to the physical world via mining utilizing electricity and silicon. This makes it thermodynamically sound, integrating it into the universe (not just the metaverse). It's sovereign; you can take

custody of it. It's egalitarian; the protocol is open. It's permissionless and global; anybody, anywhere on Earth, can engage in this network.

This is the best way to create digital capital. So how good is it? Well, it's 97% of the market cap of all proof-of-work cryptocurrencies in existence today.

Top 10 Proof-of-Work Cryptocurrencies

#	Name	Market Cap	Dominance	From ATH
1	Bitcoin (BTC)	$2,073,253,395,496	96.92%	-4%
2	Dogecoin (DOGE)	$35,542,876,368	1.66%	-68%
3	Bitcoin Cash (BCH)	$8,112,725,436	0.38%	-91%
4	Litecoin (LTC)	$7,729,580,184	0.36%	-75%
5	Monero (XMR)	$6,264,989,303	0.29%	-34%
6	Kaspa (KAS)	$3,249,382,008	0.15%	-40%
7	Ethereum Classic (ETC)	$3,087,992,170	0.14%	-88%
8	Bitcoin SV (BSV)	$800,495,675	0.04%	-92%
9	Zcash (ZEC)	$686,932,793	0.03%	-99%
10	Conflux (CFX)	$516,171,158	0.02%	-94%
TOTAL		**$2,139,244,540,591**	**100%**	

Source: CoinMarketCap.com, filtered by 'PoW', accessed 13 May 2025.

Not all crypto is based on proof of work; therefore, not all crypto is digital capital. Bitcoin is the only crypto recognized as an asset without an issuer by all major regulators. China, Russia, Singapore, the UAE, and Brazil all recognize it. This is the one thing everybody agrees on. Why? It's because of Bitcoin's Immaculate Conception. It's such a simple idea; **it's not the first, it's the only.** And yet, everybody who tries to copy Bitcoin hasn't understood this.

Satoshi created a way, gave it away, and then went away. There's no major company where someone founded it, gave it to the world, and walked off. The way to tell that every other crypto asset is not a commodity is that

they're all arguing that they *are* commodities. Satoshi is not arguing with anyone about anything. Satoshi went away.

If something is genuinely a commodity, there can't be a beneficiary. Satoshi gave up control of the protocol, gave up the Satoshi coins, and stopped trying to influence the network. It was a gift to the world.

A SOLUTION WE CAN ALL AGREE ON

Can you name a single trusted person whom all eight billion people across every nation could agree on? The answer is no one. Yet everyone agrees on steel.

If you study civil engineering, you realize how difficult it is to construct a building using stone or wood. So when steel was introduced, it solved that problem for everyone for the following 2,000 years. In fact, it is such a good solution that your politics do not matter—whether you are socialist, communist, fascist, left-leaning, or right-leaning, you support steel.

We cannot agree on a single trusted political or commercial entity, but we all agree on the utility of electricity, fire, and steel. So it is ironic that companies pay lobbyists, academics, and nonprofits to besmirch Bitcoin simply because they want you to rely on *their* company and token instead. It is obvious that no one will trust a private company to issue our money; it has to be a commodity.

COMMODITY VS. TOKEN

It's important to understand the difference between a digital commodity and a digital token. The use case for a digital token is capital creation. If you have no money and want to start a business, you issue a token to raise capital from your customers or investors.

The use case of a digital commodity is *not* capital creation; it's capital preservation and appreciation. It's for when you already have money and

want to store it for 100 years without worry. That's what all the altcoiners don't understand. If you have no money, you can't buy Bitcoin.

Bales of tobacco, seashells, and glass beads are all commodities. They have no issuer. But they make for crappy money. The king of commodities for long-term wealth preservation has traditionally been gold because it has a higher stock-to-flow ratio.[2] What happened was gold demonetized silver, silver demonetized copper, copper demonetized glass beads, glass beads demonetized bales of tobacco, and bales of tobacco demonetized seashells. Only the strongest money wins because nobody wants the second best.

Today, the strongest form of long-term money (i.e., capital) is Bitcoin because the stock-to-flow ratio is infinite. All these other assets will be traded in for Bitcoin, collapsing against it. So, there's no point trying to create another Bitcoin because only one network can win.

DIGITAL CAPITAL IS GLOBAL CAPITAL

What would you buy in Africa if I gave you $100 million, provided you had to hold it for 100 years? I would guess there's nothing on the entire continent you would choose over Bitcoin.

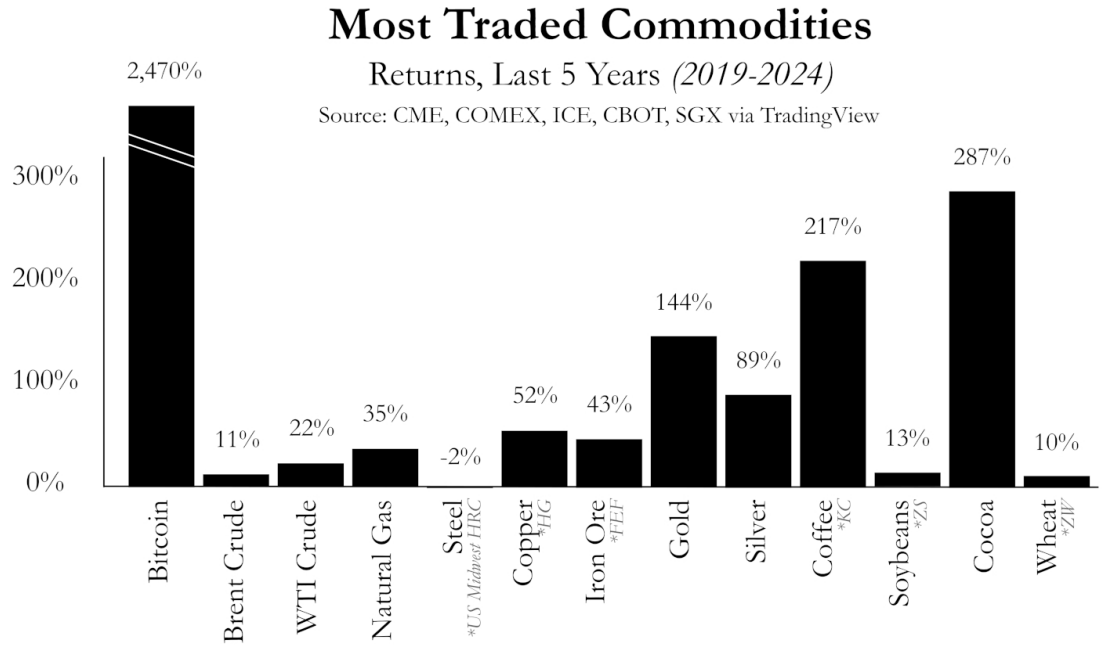
Put yourselves in Nigeria, Venezuela, Lebanon, Syria, Brazil, or Argentina —what do you want to buy? Even China has capital controls limiting how much you can take out each year. Why do you think that is? Because everyone wants to get their capital out of China, and their currency would collapse without capital controls.

Nobody wants to own anything that isn't tied into the most secure and powerful network in the world. That being the case, no matter where you live on Earth—whether you're wealthy, middle-class, or working-class—if you own a mobile phone and want a savings account, you're going to want Bitcoin.

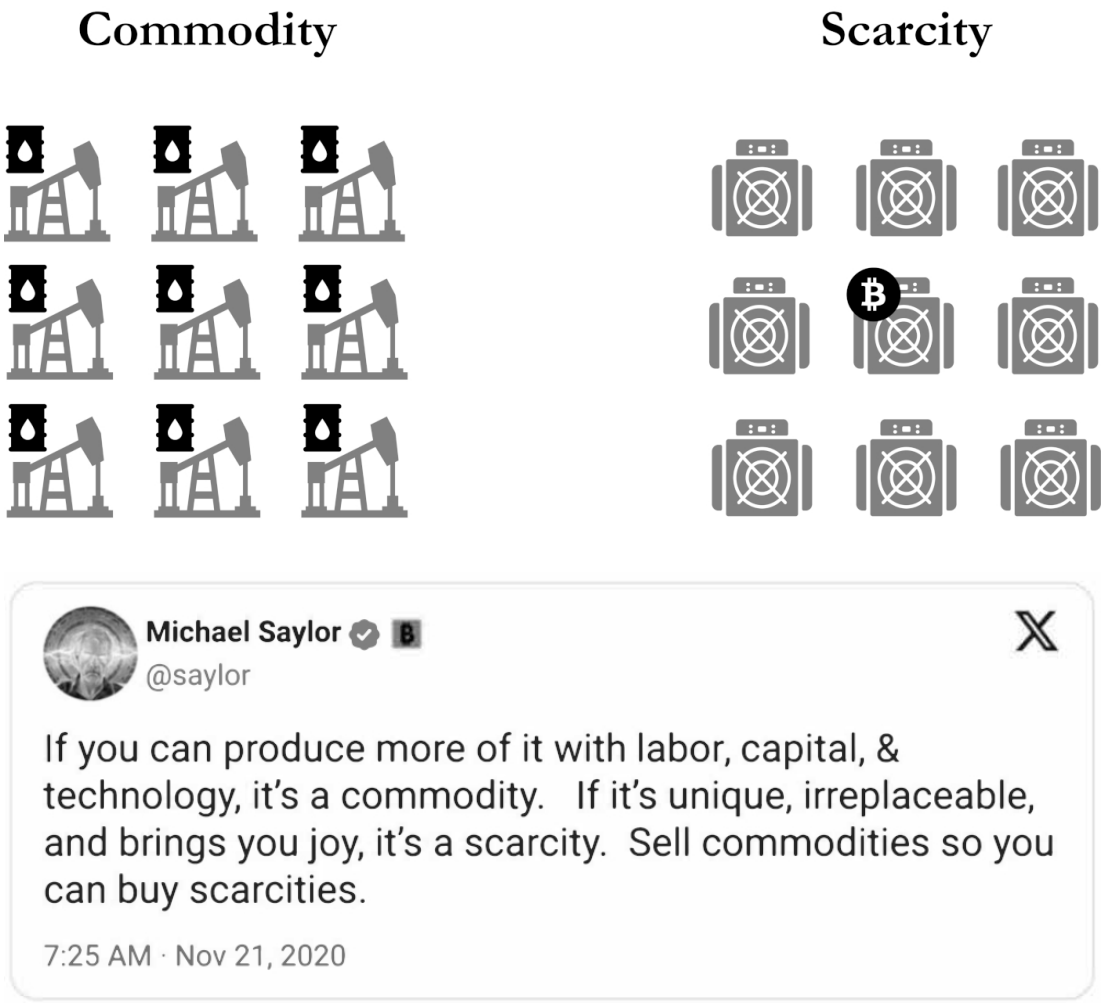
FROM COMMODITY TO SCARCITY

The creation of a digital asset without an issuer is a digital commodity. ***That's the innovation.***

Physical commodities are subject to political constraints, entropic effects, chaos, disorder, fragility, and risk. Bitcoin, by contrast, is global, programmable, durable, divisible, and portable. I can give you words and rhetoric, but the numbers don't lie.



Bitcoin is the first commodity in history with a fixed supply, a feat only possible *because* it exists digitally. Everything else is physical and, therefore, not fixed in supply. For example, 100 oil rigs can produce 100 times as much oil as one, but 100 Bitcoin miners can't mine any more Bitcoin than one. Bitcoin represents an entirely new asset class. It's not just a digital commodity, but a digital *scarcity*.



THE TIMELESS ASSET

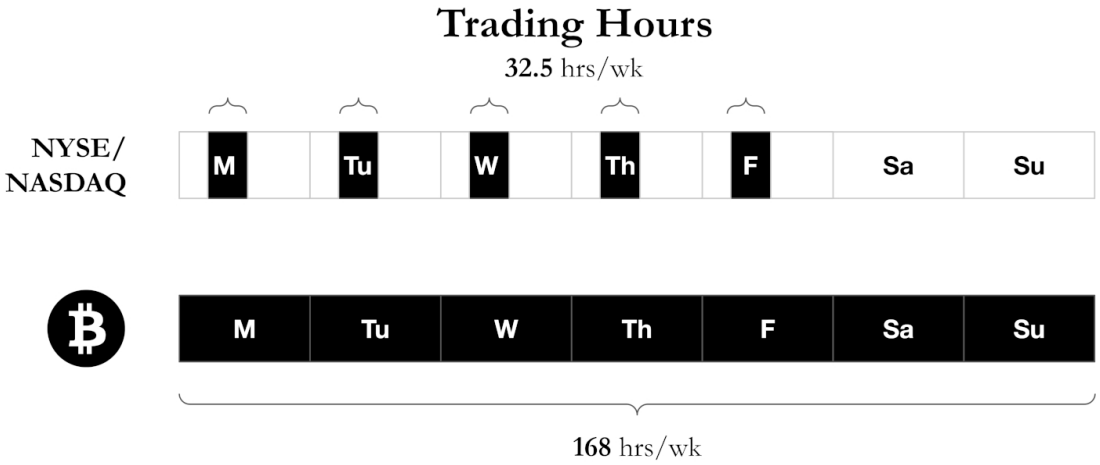
If you consider the nature of the universe, the one scarce thing is time. Politicians can't create more of it; capitalists can't manufacture more of it; AI bots can't code more of it. Time is the ultimate scarce yardstick.

What have we done with Bitcoin? We have bottled time. In essence, the process of proof of work (implemented via mining) is digitally transforming time into an asset. **No amount of money will buy you more time. No amount of money will create more Bitcoin.** If I give you $100 quadrillion, you'll never get more than 21 million Bitcoin. It gives new meaning to the phrase *time is money.* We have created the perfect monetary asset because

we have figured out how to duplicate the benefits and characteristics of time.

THE HARDEST-WORKING ASSET

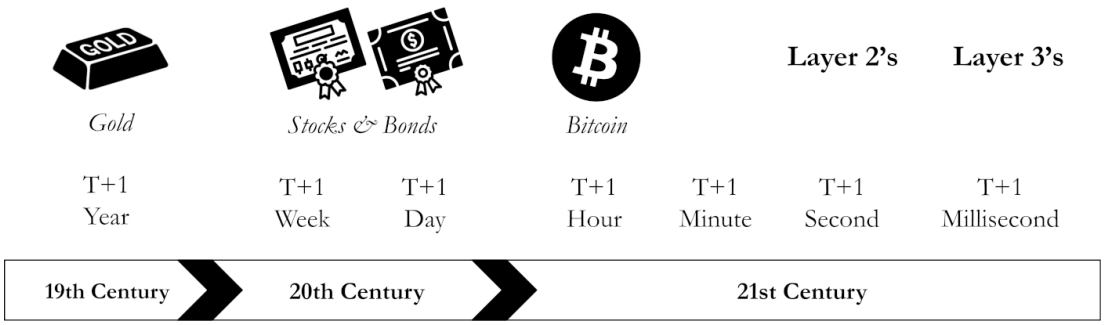
Bitcoin trades 24/7 (168 hours per week) while every other asset trades 35 hours at best, less on holidays. This is the most magical, transparent, and hard-working asset in history. I'm in awe watching Bitcoin trade at 9:30 pm on a Saturday. You could liquidate $100 million worth, any hour of any day, and maybe take a 3% haircut. Everybody should be astonished that it doesn't go haywire. This is extremely high-bandwidth price discovery.



SETTLEMENT IN THE 21ST CENTURY

The future of settlement is faster, stronger, and smarter. Bars of gold took a year to settle, so we went to stocks and bonds, which took a week to settle in the 1970s. Eventually, we got it down to a day. But, we don't want 19th and 20th-century speeds.

Bitcoin settles in one hour. I can move $10 billion, anywhere on Earth, in one hour. This is just the beginning. **We're going from *someone, somewhere, sometime* to *anyone, anywhere, anytime.*** Bitcoin is an open protocol, meaning it will improve exponentially. We're headed to a world where we'll settle in T+1 millisecond.



---

1. ↩ A piece of data satisfying certain criteria that requires provable effort (time, energy, etc.) to produce but is easy to verify.

2. ↩ Stock-to-Flow Ratio = total supply of the commodity in existence divided by annual increase in supply. A higher ratio indicates greater scarcity.

Digital Property

BUILD ON BEDROCK

Digital capital is a helpful metaphor—but it falls short. You can't develop, rent, or finance it. A more accurate metaphor is *digital property*.

A city that will stand for 1,000 years requires a foundation that deflects the least under pressure. It'll come as no surprise that Manhattan in New York City is built upon an incredibly hard bedrock of schist[1]. If you could go back in time and buy Manhattan in 1626 for 60 gilders, you would. But you could've also bought Manhattan real estate, every decade, for the next 400 years, always paying more than the previous person, and it still would have been a good idea. That's because it's the greatest city in North America. Everybody wants to do business there. There's limited land because it sits on a perfect rock. In short, there's never been a bad time to buy Manhattan real estate.

The key to getting rich is:

1. **buy scarce, desirable property, and**
2. **hold it for a long time.**

It might not feel like much, but when compounded over hundreds of years, it adds up.

Your family would be incredibly well-off today if it had bought 100 acres of land in the middle of Manhattan 100 years ago. But if your family has to pay their bills, you don't want to have to sell your property. Instead, you want the option to rent it out, develop it (build on top of it), or mortgage it (borrow against it).

Aim to own scarce, desirable property, but it should be **productive** property you can develop. Additionally, you don't want anyone to impair, tax, or steal it, so ideally it's also **defendable**.

DIGITAL VS. PHYSICAL PROPERTY

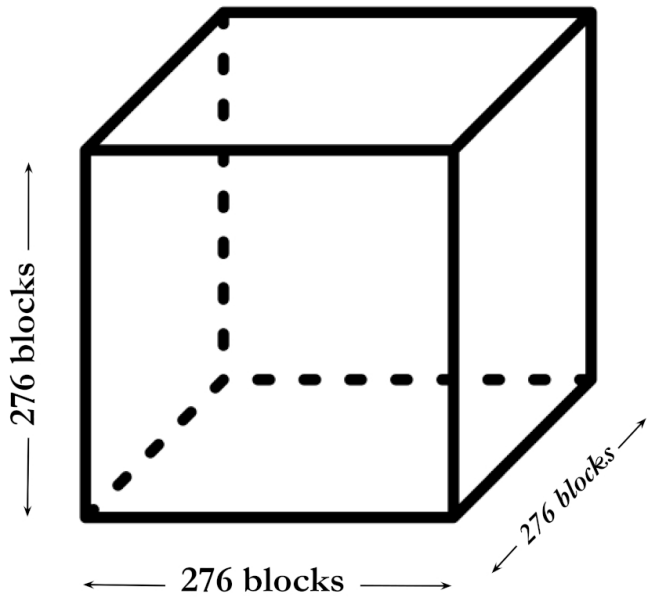
Physical property is developed with bulldozers, steel, glass, and people. Whereas digital property is upgraded with computer chips and software. There are no fixed costs or fixed assets; maintenance costs collapse, risk collapses, and opportunity explodes.

For example, if you want to give a library to a billion people, you have to chop down a lot of trees to manufacture a lot of books. If Google wanted a billion people to have a digital library, it would cost a million times less because the marginal cost is simply the electricity.

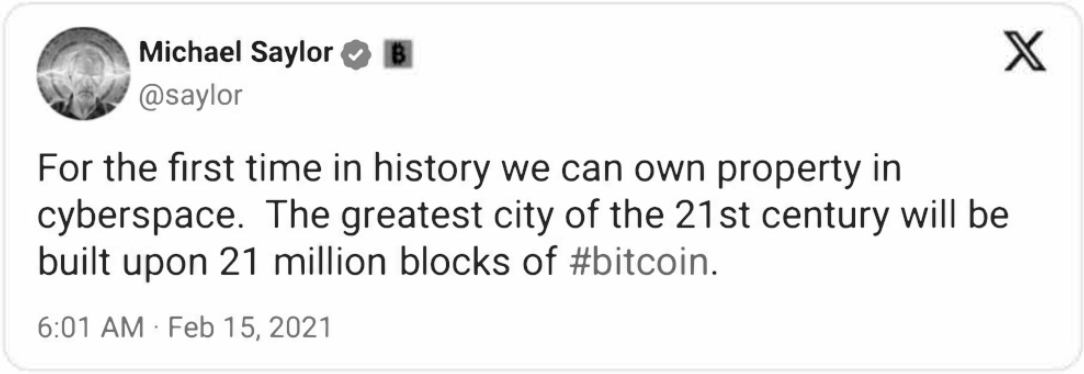
CYBER MANHATTAN

Bitcoin is the Manhattan of the digital world. It's the greatest city in cyberspace, consisting of 21 million blocks: 276 blocks wide, 276 blocks long, ~276 blocks deep.

$$276^3 = \sim 21{,}000{,}000$$



If I told you there are 21 million blocks in cyberspace, and only ever going to be 21 million blocks, and you showed up 100 years before everybody else, you would just start buying city blocks as fast as possible. This is difficult for someone in Manhattan to grasp; they live in the most economically secure city in the most powerful country in the world. Anyone who owns an apartment in Manhattan would never sell it because everything else is a trade down. But you can sell digital property to anybody on Earth. You can also rent it to anybody on Earth, at any frequency or duration, and do it faster. That makes Bitcoin's addressable market between ten and 100 times bigger than physical property.



In the modern world, we've monetized metals, securities, commodities, and property. If hundreds of trillions of dollars migrate to cyberspace, Bitcoin will demonetize physical property in the same way it will demonetize gold: you'll still wear gold jewelry, and you'll still need a place to live, but the value of these things should collapse to their utility value, no longer carrying a monetary premium.

---

1. ↩ A metamorphic rock. Manhattan Schist is largely composed of mica, quartz, feldspar, and garnet.

Digital Energy

FORM ANALOG TO DIGITAL ENERGY

If I stored energy as electricity in a battery, 2% of it would leak each month (~20% per year). If I send the electricity over power lines, there's a 6% transaction cost. Move it ten times and I lose half of it. That's the only way to store analog energy. You could convert it to steel and store it as **metallic energy**, convert it to oil and store it as **liquid energy**, or convert it to Bitcoin and store it as **digital energy**.

The entire Bitcoin network is monetizing energy. You've got a software protocol running on a machine that's converting electricity (from any energy source, anywhere on Earth) into a digital commodity. Your costs are the mining hardware, facility, and engineering to run it all. Once you've generated the Bitcoin, you've got a block of digital energy that you can hold for 1,000 years because there's zero inflation. In addition, you can move it 1,000 times with minimal leakage because the transaction fee is next to nothing using the Lightning network.[1]

How is Bitcoin digital energy, and how do you get it back to being energy? The answer is I send a billion-dollar block of Bitcoin to Tokyo, run it through an exchange, and convert it back into yen. I take the yen and buy electricity from the Tokyo Power Company. And when do I do that? Whenever I want to do that. As long as a civilization can produce electrical energy, I can exchange my digital energy for political energy (fiat currency), and my political energy for analog energy (electricity). Or, if I wanted metallic energy, I'd buy steel. And, for liquid energy, I'd buy oil.

Satoshi discovered digital energy, which you can program on a computer and channel through time and space. It means I can now capture a billion dollars' worth of something valuable, move it between New York City and Tokyo 60 times a second, or hold it for a thousand years in cyberspace without fear of dilution or decay.

ANALOG VS. DIGITAL POWER

When I started studying Bitcoin mining, I became fascinated by general energy and power comparisons. If energy is understood as the capacity to do work, power is a measure of energy over time. Then Bitcoin is digital energy, and Bitcoin mining is digital power (digital energy over time). Take away the mining, and it is just analog power, which isn't that impressive.

Bitcoin mining uses the SHA-256[2] algorithm. That software choice shaped the hardware that followed—the genetic code was set. Bitcoin miners don't use general-purpose CPUs; they use purpose-built chips—ASICs (application-specific integrated circuits)—optimized for one task. Securing a decentralized network that creates an asset without an issuer demands a proprietary form of energy, derived solely from dedicated hardware.

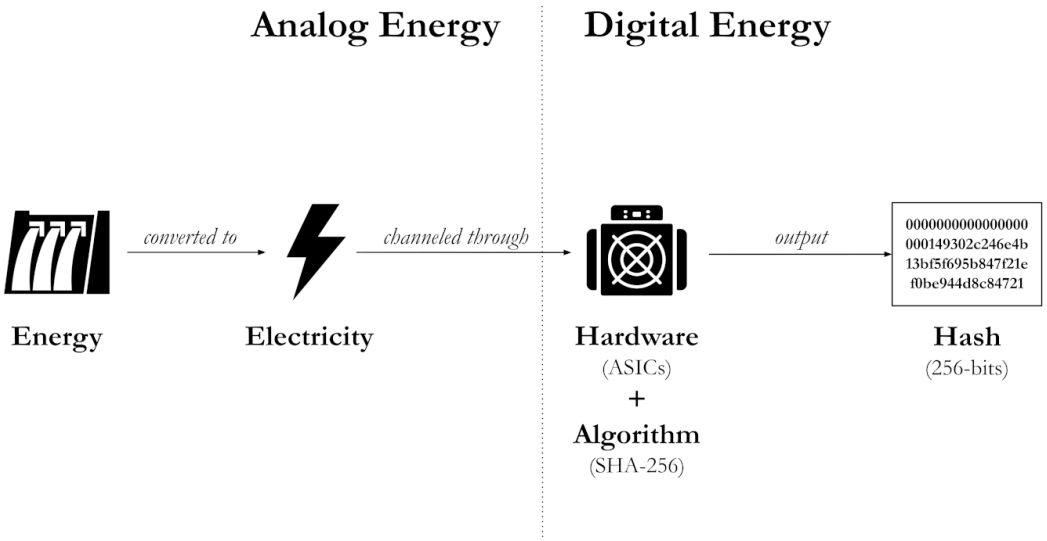
You could control every hydroelectric facility in the world, but without channeling that energy into digital power, it won't secure your digital network. So, it all comes down to the ability to generate a specific type of power.

If I want to secure my wealth for 10,000 years, I need an immortal protocol that maintains its integrity. The only way to ensure this is to continually feed it with energy and resources, enabling it to withstand attacks. **We often view security as avoiding attacks, but it really means being *impossible* to attack.**

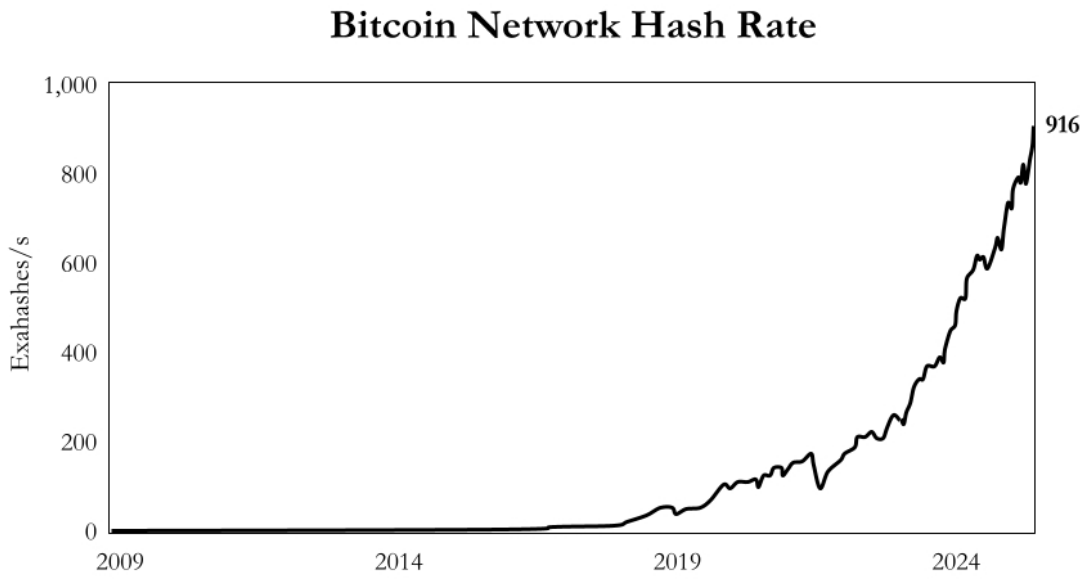
Bitcoin is secured by digital power.

A WALL OF DIGITAL ENERGY[3]

The measure of power in cyberspace is the **exahash** (one quintillion hashes per second). The only way to generate a hash[4] is by converting analog energy into electricity, combined with computing power. You're feeding electricity into one end, and out the other end comes a hash.

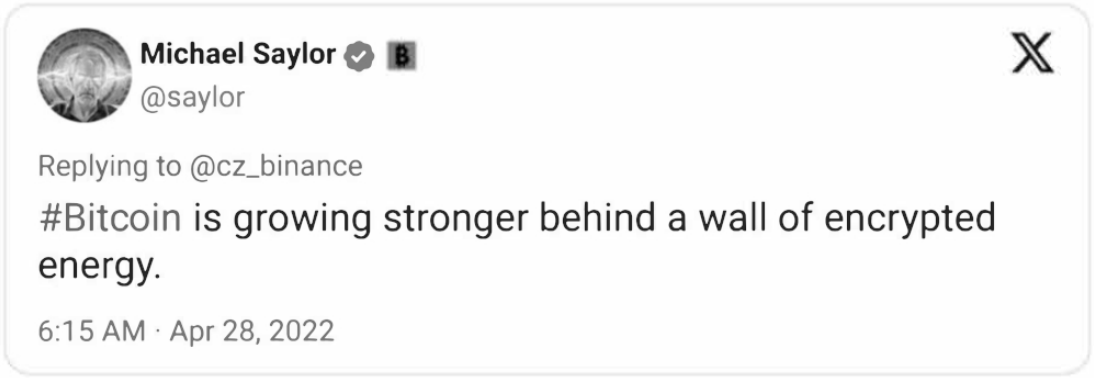


Taken in aggregate, all miners globally create a network hash rate (number of hashes computed per second). The Bitcoin network is running at 900 exahash in 2025, which equates to ~$50 billion worth of computer equipment. That's a ~$50 billion capital investment on the compute side, and then you can value the energy input. At six cents per kilowatt hour (kWh), that's $12.5 billion a year, and at ten cents per kWh, that's $21 billion a year of electricity. That's what it takes to run the network today. But that's not what it takes to *attack* the network.



Source: hashrateindex.com

If you wanted to block or intercept every message on the network for the next ten hours, you'd need to win the next 60 blocks. Statistically, you'd need to control 98% of the hash rate, which means bringing online 50 to 100 times the current hash rate. It's like trying to scale a 2,000ft wall with a one-foot step.



---

1. ↩ A peer-to-peer protocol sitting atop the Bitcoin protocol. Enables instant and near-free Bitcoin micropayments at scale, without sacrificing self-custody.

2. ↩ A cryptographic hash function which takes an input of any length and produces a fixed-size output of 256 bits (32 bytes). It is

computationally infeasible to reverse the hash to obtain the original input.

3. ↩ Dollar values updated by the editor to 2025 from 2022.

4. ↩ A fixed-length string of characters generated by a cryptographic hash function, like SHA-256, when you input data (e.g., text, files, or a Bitcoin block header). Akin to a digital fingerprint: unique to the input data, compact, and irreversible.

Digital Defense

THE BEST DEFENSE

There are three primary ways to understand Bitcoin: as digital property, digital capital, and digital energy.

As digital property, it's a $2 trillion block of property in cyberspace that no one can create more of. As digital capital, it's safeguarding $2 trillion of wealth for 100 years, free from counterparty risk. As digital energy, it's digitizing $2 trillion of analog energy, preserving it indefinitely on the network with zero power loss. But there's one last metaphor worth exploring: Bitcoin as a **digital defense system**.

> *"In the last 3,421 years of recorded history, only 268 have seen no war. The causes of war are the same as the causes of competition among individuals: acquisitiveness, pugnacity, and pride; the desire for food, land, materials, fuels, mastery."*
>
> —WILL & ARIEL DURANT (*The Lessons of History*)

The Great Wall of China was a defense system. It's a fortified stone structure, built to keep out invaders. It was very expensive and labor-intensive to create, maintain, and guard. But, it was a fragile defense, because of its static nature. The Mongols were able to attack and exploit weak points, defeating several dynasties and conquering much of China.

Next, we can think about Alexander the Great's father, Philip II of Macedon, who said: "No citadel is impenetrable as long as it has a road wide enough for me and a donkey with a pot of gold on its back!" What he meant was that it doesn't matter how strong your defenses are if I can bribe the gatekeeper.

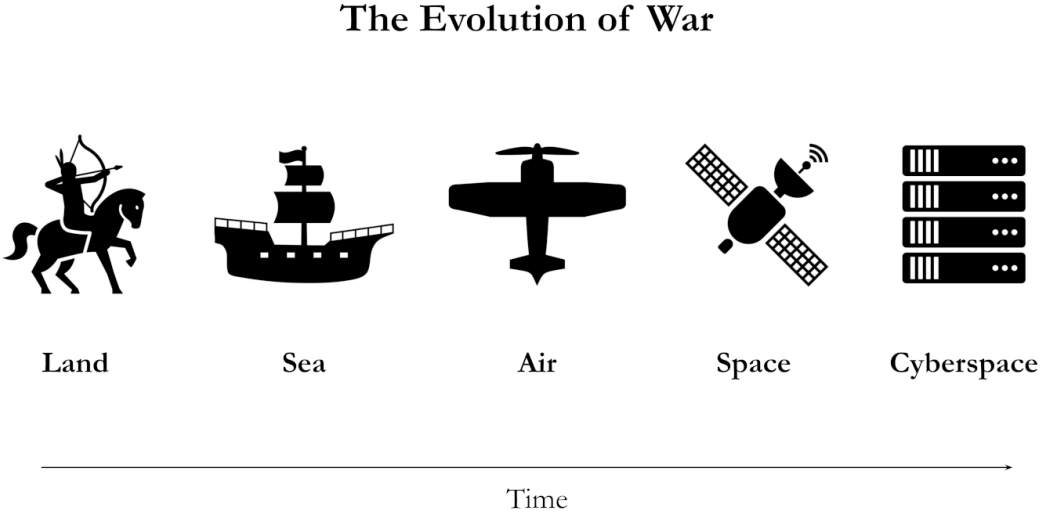
The third example in modern history is the Maginot Line, a formidable defense system of fortifications, bunkers, and artillery emplacements, built

by the French in the 1930s to deter a German invasion. But the Germans bypassed it by invading through Belgium and the Ardennes. They hacked it!

In summary, when you think about military history, one of the key lessons is: The best defense is a good offense (a.k.a. an *active* defense). A boxer's best defense is to move faster and hit harder, so they can't be hit! It's continuous adaptation—absorbing your enemy's capabilities and reactions, then playing them back at them!

DEFENDING CYBERSPACE

History is just a long story of war after war after war. We've seen war shift from land to sea, air, space, and now, cyberspace.



Being a superpower at any point during the last thousand years required control over your sea lanes, which are essential for trade and defense. The Carthaginians understood this, which is why the Romans destroyed them during the Punic Wars. Japan also learned this lesson in World War II when its sea lanes were cut off, choking its economy. Maintaining sea power requires naval bases and appropriate ships. You might rule over New York City, but if you lose control of the surrounding airspace and sea lanes, you won't hold it for long.

Similarly, a sovereign nation today cannot survive without control of its airspace, outer space, and cyberspace. In the first Gulf War, the U.S. demonstrated this by taking control of Iraqi airspace, rendering the entire country non-functional within a week. Protecting airspace requires air force bases with military aircraft, and this defense will continue to evolve as drones become increasingly sophisticated.

> *"As it says in the Bible, God fights on the side with the heaviest artillery."*
>
> —ROBERT A. HEINLEIN (*The Moon Is a Harsh Mistress*)

Cyberspace is equally vital. A superpower must keep its cyber channels open. This means communication channels for moving digital information *and* digital energy. It's not just about moving it between New York and Tokyo. If control of cyberspace is lost over the U.S., information and energy can't even move between New York and Chicago. Imagine the chaos if an enemy gained control of your cyberspace and you couldn't log into your bank account. You lose your entire digital economy.

If you are going to fight a cyber war, your systems cannot stop working. But, there's one thing that's worse: when all your systems start working against you. This is akin to an autoimmune disease, where the body attacks itself. You see this politically when a government turns its weapons on its own people. Therefore, a cyber-defense mechanism must be based on a cryptographically-secure digital system, defended by raw power.

GREAT WALL OF MINER

Bitcoin is the culmination of 40 years of thinking about cryptography, decentralization, power, and energy. If you want to create a system that can't be corrupted, censored, tampered with, or hacked by another computer or AI, you need raw power combined with cryptography—a wall of encrypted energy.

Today, in its current manifestation, Bitcoin is the greatest example of a stable cyber network defended by raw power. You can think of it as a cyber-

defense system. Like a missile defense system, Bitcoin miners (using ASICs) create a wall of digital energy to secure cyberspace. The network of Bitcoin miners is, in essence, the *Bitcoin security network*. To be a cyber superpower, you need more than half of this power controlled by you or your allies. True ownership of cyberspace means not only owning the asset (Bitcoin) but also dominating the digital energy network that flows around the world.

AI RESISTANT

Artificial intelligence (AI) is revolutionizing our world. AIs are smarter than us, can think faster, and can communicate seamlessly with each other.

This digital intelligence requires digital energy, secured by digital power, to drive the future of commerce. By this, I'm not just talking about the purchase of trinkets on Amazon, but rather the movement and security of the world's $900 trillion (and growing) in wealth.

To build the greatest economy, your cars need to drive themselves, your robots need to think for themselves, and your factories need to run themselves. However, this transformation raises critical security concerns. When evaluating cybersecurity systems, the key question is: how much energy is required to break them?

AIs can exploit systems based on **human intellect** by mimicking individuals with alarming precision—imagine a family member receiving a video call from someone who looks, acts, and sounds exactly like you, urgently requesting help. Most would fall for it. Major tech companies and banks are vulnerable too; compromising just a few key employees through phishing or spoofing can unravel their defenses.

Human virtue is an equally unreliable foundation for security, as people can be legally coerced through court orders, imprisonment under state interests, or blackmailed.

In contrast, Bitcoin is fortified by a 900 exahash wall of encrypted energy, secured by its network of miners. AIs may deceive humans by

impersonation but they cannot penetrate this level of raw power.

Among all systems, Bitcoin is the only one recognized as truly secure. And because nobody prefers anything less than that, **there is no second best in security.**

NATION-STATE RESISTANT

Like the logic of a literal wall, a wall of encrypted energy defends against the three things most nation-states have: commodity currency (fiat), commodity energy, and commodity compute power.

Some, but not all, nation-states can print $100 billion of **commodity currency**. A truly secure system isn't based on commodity currency. Commodity currency can't be used to attack a proof-of-work network like Bitcoin, but it can be used to attack a proof-of-stake network. If your network is secured by $10 billion of your token, and it's available to trade, I can easily come up with another $10 billion by printing it out of thin air. Commodity currency can also be used to attack a centralized or any proprietary network—you just coerce, bribe, and incentivize the result you want.

Commodity energy can't be used to attack the Bitcoin network either, because it has to be modulated through the ASIC miners. You would need 2,000 times as much commodity energy as the network's proprietary energy. That's all the energy on Earth—it doesn't work.

Finally, there's **commodity compute power.** If you took *all* the commodity compute on Earth and infinite commodity currency to rent *all* the AWS CPU nodes, you'd need three and a half Earths. The only way to attack the network is to actually play the game over a long period—you have to mine Bitcoin with ASICs that get progressively more efficient. **It's an arms race**.

If you want to spend a decade and billions of dollars to try to enter, you can. It won't be cheap or stealthy, and there's no cheat code or shortcut. You can't repurpose any existing hardware; you must commit to specialized equipment, and everyone will know—secrets that big don't stay hidden for

long. No private actor can afford to subsidize it. But any private actor can mine Bitcoin and support the network.

In theory, a hostile nation-state wishing to attack Bitcoin could print billions of dollars to develop miners and create mining facilities. But **the enemy will be at the gates for a decade**. And sometime between year two and year eight, we will have decided what to do. Maybe that's to brick all the ASICs and migrate the network. But of course, what government do you know that would want to spend a decade failing to attack something? It's much more likely that you'll just flip everybody in that government to support Bitcoin by that point.

Ask yourself: How many countries in the world would rather have $100 billion versus spending $100 billion attacking Bitcoin over the next 10 years? You're down to a very short list! Bitcoin is just the most well-thought-through cybersecurity network.

A SWARM OF CYBER HORNETS

I've often referred to Bitcoin as a swarm of cyber hornets, and people think it's just a cute metaphor. But to me, it's literally a swarm of cyber hornets that keep getting stronger, faster, more powerful—and if you try to stop them, they'll eat you.

Bitcoin is composed of several elements: software, hardware, facilities, and geopolitical domains. People are building that hardware, running that software, and operating those facilities. They're also acting in political and economic domains. People are continuously improving software wallets, hardware wallets, exchanges, software clients, ASICs, and mining pools. They're negotiating with governments worldwide to secure better electricity infrastructure and regulatory treatment. They're marketing Bitcoin through education on YouTube, X, and podcasts. They also create financial models and investment cases.

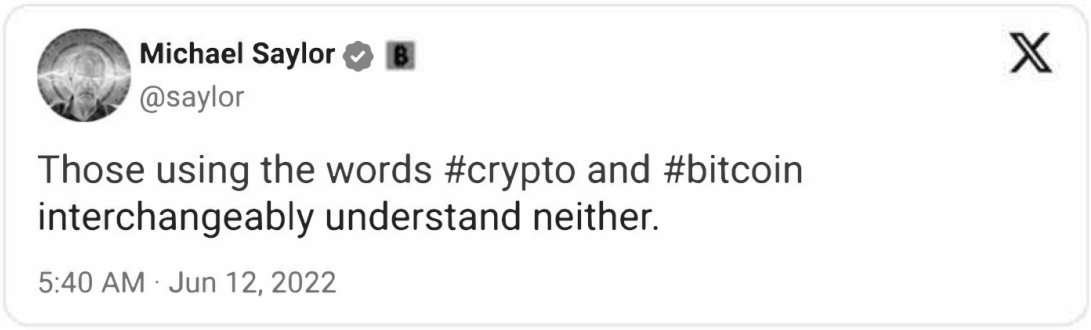
The antifragility of Bitcoin comes from the fact that everybody in the ecosystem feels the same pain. If Bitcoin gets hacked and goes to zero, every bitcoiner loses their life's energy. We bitcoiners are a hive creature,

integrated with each other. When pain strikes, that information spreads rapidly through the entire ecosystem.

If we consider threats to Bitcoin like quantum computing, I always want to say, “Yeah! What if an asteroid hits the Earth and kills us all?” There are many silly notions that revolve around someone evil with an impossibly powerful weapon deciding to use it against Bitcoin. A more constructive way to look at it is: If someone builds a computer twice as fast as current ones, the most profitable use is mining Bitcoin. If someone develops hardware that generates SHA-256 hashes faster than today’s mining equipment, the most lucrative thing you can do with it is plug it into the network and contribute more hash rate. Who do you think will figure that out first? People with billions in invested capital or someone with no skin in the game?

What if a computer gets so powerful that it can crack SHA-256? Who do you think will notice first? People with $2 trillion at risk, or someone who just wants to solve the problem so they can crack the world? We’re just going to go to SHA-512. Anybody who’s studied computer science knows we start with 16, go to 32, 64, 128, 256, 512, and 1024, and so on. When they break that, we’ll flip to another algorithm.

Crypto



A "BETTER" BITCOIN

Every new generation thinks it can do it better: "I could run that company better. I could build that product better. If only I were in charge of the city, the football league, the marketing department, etc."

What they don't realize is that they have this inventor's bias—the delusion that something is beautiful and a million times better simply because it's *their* idea. They're ignorant and don't understand all the ways it won't be better once introduced.

Let's boil it all down to one idea: the whole ethos of crypto, properly understood, is the creation of a digital commodity without an issuer. And it's been achieved by Bitcoin.

You can't have a CEO or management team keep 20% of the supply, have control of the protocol, and call it a commodity. Satoshi's genius was creating a digital commodity without an issuer, but the protocol is what makes it scarce. Let's say you forked Bitcoin, gave it to the world, and disappeared, but changed the code to remove the halvings.[1] What you're left with is a commodity, but it's not a scarcity. Without the halvings, it would simply continue to inflate forever and wouldn't be hard money.

You could create a clone of Bitcoin that's also capped at 21 million units, but with some minor change—maybe the difficulty adjustment takes place every four weeks instead of every two weeks. It would still be fixed in supply, but it'll be a different network and protocol. Would one be better than the other? It's like single-cell organisms—two bacteria may appear identical to us, but one beats the other when fighting for survival. Another way to say this is that not all digital commodities are equally good. You can have a superior protocol and an inferior protocol. Just like copper, silver, and gold are all commodities, but one makes for harder money than the rest.

COMPLEXITY KILLS

It doesn't take a rocket scientist (and I am a rocket scientist) to figure out that when you make something (e.g., software) more complicated, more things can break, and there's a larger attack surface. Everybody in the Bitcoin community understands this.

Bitcoin miners use application-specific integrated circuits (ASICs)—special-purpose chips that only do one thing: generate hashes. And they use hardware wallets, specialized devices that only do one thing: store a private key offline to enable secure transaction signing. If someone said, "Well, I want to use Amazon Web Services (AWS) and my iPhone," they would say, "Too many attack surfaces!"

The number one lesson we learned at MIT was the importance of simplicity; complexity kills. Too many moving parts means something will eventually break. Keep it as simple as possible. You see this applied in the military. In mission-critical systems, where lives are at stake, you would opt for the low-tech solution you can verify with your own eyes. I don't want complex software running millions of lines of code to tell me something is stable; I want to test it myself. When software drives a car or flies an airplane, failure can be catastrophic.

Take Boeing's 737—one of the safest aircraft ever built. Engineered in the 1960s, it has flown reliably since. Why did its MAX 8 variant start failing out of the sky 50 years later? It's because well-meaning engineers wanted to

improve it. And so, they made it "better" by writing software to compensate for human error. The engineers assumed their system could outsmart the pilots. They overengineered the software, which caused two MAX 8 crashes, killing everyone onboard. If they'd done nothing, the pilots would've managed fine. That's the argument in favor of simplicity—**"Keep it simple, stupid."**

INDESTRUCTIBLE ABOVE ALL ELSE

In regards to crypto, it's great to have all this innovation and experimentation. The outsider thinks, "What if everybody moves their money out of Bitcoin to something else?" The easy way to get beyond it is to say, "This is a proof-of-work crypto network designed to be a store of value, and the only thing we're gonna do is to maintain it. We'll expend huge amounts of energy to protect and upgrade the network. So, you can take your $500 million out of the bank and store it on our network."

Take the example of a superhero. They don't have to be the biggest or the fastest. They just need to be invincible. Because, then, everything else can be learned or bolted on. I can find a way to construct every other superpower by hook or crook, making me antifragile. Now I'm impossible to stop!

The same is true for an open software protocol. I don't have to be the shiniest. What is important is that it does not break! All of these other characteristics—privacy, speed, etc.—are interesting but pale in comparison to indestructibility. That's what makes it *the* winner. It becomes the most powerful network in the room because someone will code an extension to give it every other superpower anybody wants.

Bitcoin Network Uptime

Last 10 Years (2015-2024)

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: BitcoinUptime.org

UNCHANGEABLE

> *"The nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime."*
>
> —SATOSHI NAKAMOTO

What's the difference between the definitions of "change" and "corrupt"? When do you corrupt something and not change it? **Most of the problems in the world result from well-intentioned people changing things.** The very ability to change them corrupts them—*that's the problem*. I don't want to hear that you've got a new idea, that you're upset over transaction fees, or that you want to implement smart contracts and need to change everything. I want to hear that you'll defend the network to the death against someone trying to break or compromise it in any way, shape, or form.

For example, let's take another commodity: steel. **Why is steel a commodity? When they figured out how to create steel, the recipe was released into the universe, and they couldn't take it back.** It's a one-way function—you create it, release it, and then even your worst enemy can build with it. Bitcoin's already been battle-tested and endured countless attacks. Seeing the community tirelessly defend Bitcoin gives a person like me the confidence to buy billions of dollars worth.

SOFTWARE AS DNA

Mother Nature has given us millions of creatures: spiders, fish, eagles, humans, etc. Their DNA is differentiated, and they're good at specific things. You release the creature and let it become the best version of itself. You don't tinker with it. For if you do, you're kind of starting over again.

When you create a cryptocurrency, you're creating a software life form and releasing it into cyberspace. It's not the same as building a centralized application. You're coding the DNA and letting it go. You can't keep tinkering with it. If it's genuinely decentralized, it can't be possible to call it back five years later to swap out the heart, add more legs, and update eye functionality. The architect must figure out the protocol at the very beginning because a protocol for decentralized applications will not be the same as one for digital capital.

COMMODITY VS. SECURITY

The CEO of a software company with a controlling share, like Mark Zuckerberg, could say, "I've decided to change how the algorithm works, and it's my way or the highway!" But it's a security, and you're accountable to shareholders.

If you're promoting your crypto network as a commodity, no one should have the power to dictate what happens next. The fact that you have a roadmap and the power to implement it makes it a security. Forcing your views on asset holders doesn't sound like consensus. Forcing them on miners doesn't either. Ethereum miners, for instance, would never have voted to switch to proof of stake.

If a small group of developers writing software can decide whether others make or lose money, couldn't those developers, in theory, choose never to let you unstake your tokens? They could. And what could you do about it? What's your token worth in that case? Nothing! You have a classic example of a small group playing God. You don't sidestep this by saying, "We're going to take a vote." If you did, it'd be a shareholder vote. Corporations hold votes. It's a security.

You create a commodity when you make something that no one can reasonably change without overwhelming universal consensus. Want to change something? If I don't update my node, you can't force me to change anything. You can fork off—break off and do your own thing—but you can't force me to join. That's what defines a commodity: the lack of centralized control.

We know the Bitcoin mining reward structure for the next 120 years. We have an algorithm to determine transaction fees for the next thousand years. We knew that on January 3rd, 2009. It hasn't changed. That's the monetary protocol of Bitcoin—capped at 21 million.

WINNER TAKES ALL

Life isn't fair, and neither is the global economy. If you're the winner, you're the winner. Otherwise, you just get gradually crushed. This is a sobering observation: **if you're going to invest in and align yourself with an idea, it had better be the best idea—because the second-best idea is worth nothing**.

As other crypto assets fail because of competition, regulation, entropy, security, or complexity, people will move away from them. All the users and capital in the "crypto" ecosystem will flow into the most credible, secure, and legitimate network: Bitcoin.

THE THREE HAZARDS OF PROOF OF STAKE

To solve real problems in the universe (e.g., clean water, nutritious food, or a comfortable environment), you must build machines and manipulate matter and energy.

The number one problem with all the non-energy-based cryptos is that they're all just software programs. If you only write software, the only thing you can do is improve *virtual* circumstances.

You're creating a virtual machine to move imaginary tokens around to achieve an imaginary goal to create imaginary happiness. And **you're trapped in the metaverse**. If we were wired in cubicles, immobilized, getting fed through a tube, and we lived in our brains, maybe you would focus on that metaverse. But that's literally the Matrix! You can write a billion software programs, but they'll never feed you.

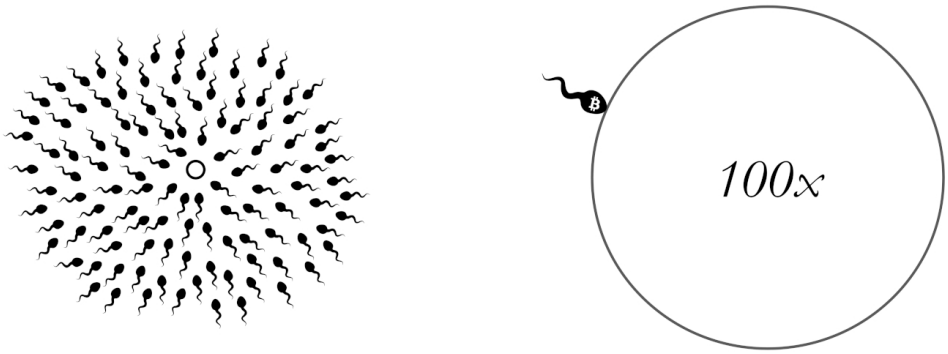
When you remove the energy component from a crypto network, you introduce an economic, technical, and moral hazard.

1. **ECONOMIC HAZARD**

   Once you switch to proof of stake, you're running on generic hardware using imaginary energy. When the energy disappears from the equation, it's easy to spin up 10,000 copycat networks.

   How many teams of eight programmers can copy, paste, and spin up an AWS node? **There are now millions of crypto tokens**. They're all chewing into each other's monetary premium. **There's no way they can hold value because there's no scarcity once you remove the energy component.** So, it simply becomes a marketing game. They're comparable to casino chips or coupons in that you'll be limited to the value you can create in a coupon network or a securities network, which is two orders of magnitude less than a monetary network.

Comparing Total Addressable Markets



Coupon/Securities Network
Proof of Stake

Monetary Network
Proof of Work

2. **TECHNICAL HAZARD**

The technical hazard of *not* using hardware with electricity is you must then create a virtual world. In a virtual world, you have to write software to control things like the speed of light, the speed of sound, heat dissipation, gravity, and materials' coefficients. You're literally playing God. You have to simulate everything anyone might want to do. It's not easy for a small group of engineers to duplicate what the universe worked out over the last four billion years. **It creates complicated code, which results in a large attack surface** (security threats).

From a maintenance perspective, you're also accumulating a lot of technical debt. I know this from having run a business and overseen the same software for 30 years. We were coding it in 1993. I can tell you that when you're on the 13th version and sixth generation of engineers, **every time you add one new thing, you break two existing things**. You're forced to go back and re-architect the entire system to make any progress. You end up spending as much time addressing regression and technical debt as you do on new development—exercises that are extraordinarily expensive.

When you attempt to create a decentralized world in software, you've probably bitten off more than you can chew. It may work temporarily if you get everything perfectly right. But, overlook just one thing (and who knows what that might be), and make a single mistake in the code, and you risk it all crashing down—the entire universe collapses on you.

Proof-of-stake networks exist in simulated worlds, so you have to create all these constants and enforce your own concept of time. If you live in a universe where the laws of thermodynamics hold, there's a rate at which heat dissipates. You don't have to write software to tell Bitcoin miners how to do it. You also don't have to write software to apply things like gravity or the speed of light. Since Bitcoin exists in the physical world via mining, it absorbs the universe's physical constants. And everything works in parallel at the speed of light.

3. **MORAL HAZARD**

When you create a simulated universe, you do so via a very organized software development function. When you derive all of your security and integrity from software, you've decided to fund a software development effort ad infinitum. Generally, you've created a software development company.

If the software developers can grant or deny permission or access (e.g., to let you withdraw your tokens or not), at that point, the software company has become so central to the network that you've created a security.

It becomes an investment contract per the definition in securities law because you are relying on the efforts of others. And it's pretty much impossible not to rely on the efforts of others when you require software engineers to make the sun shine, the planets revolve around the sun, and to enforce gravity in your simulated universe.

Eventually, you become subject to a nation-state attack. The government shows up and says, "You have to do this or block that. You have to make it impossible to spend the coupons in China." Now you're tinkering with the universe. Imagine if I were able to stop gravity in Russia. The real problem with a virtual universe and network is that power ultimately concentrates in the hands of the software engineers, and you've inadvertently created an investment

contract, relying on a software company, with the token becoming equity in the company.

There's an ethical way to sell equity in a software company. It's been done by the likes of Oracle and Microsoft. But it requires registration statements and a whole set of disclosures. That doesn't happen in the crypto ecosystem. The innovation that's critical in crypto is the creation of an asset without an issuer. You've failed whenever you default to a software organization to create or maintain it. That's why energy, a la Bitcoin, is the superior (and maybe the only) approach for solving the problem of sound money. **Set the protocol and don't mess with it.** Occasional soft forks to fix a fatal bug, but otherwise don't mess with it. We have every reason to believe the monetary policy in 2140 is the same as today.

Nobody in crypto can agree on anything except that Bitcoin will be around for the long term.

---

1. ↩ A programmed 50% reduction in the amount of Bitcoin minted with each block, taking place every 210,000 blocks. This protocol feature results in a terminal supply limit expected to be reached around the year 2140.

Lessons From Ethereum

It took me 15 hours of research, start to finish, to conclude that Bitcoin was the best money ever invented. It took me 15 minutes to see that Ethereum was still in its developmental venture-capital stage.

Want to ruin Bitcoin? Just change the protocol every time you have a new idea. What you get is Ethereum. They have 10 years' worth of new ideas on the roadmap and keep coming up with more.

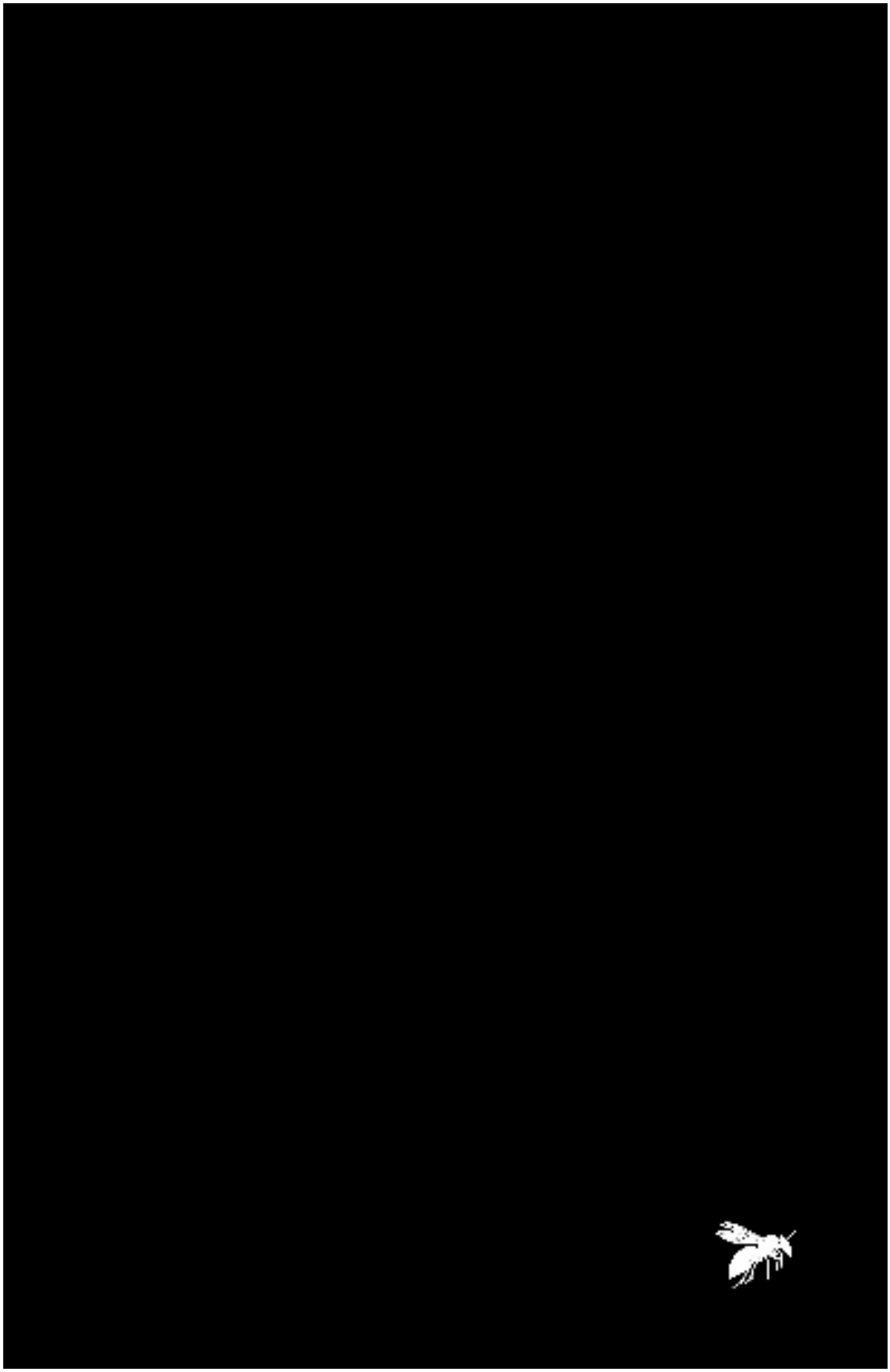
Vitalik Buterin's view that we can simply do anything we imagine is unhinged from reality. Anyone who's ever built software knows you start with an idea for a feature, then go down that path only to realize that it won't work or no one wants it. Although it may be running on 20 computers instead of one, it's still just a software program. Smart contracts and the like are all available in software. You can do them on web browsers and iPhones using little electricity. There's no breakthrough there.

The entire Ethereum 2.0 process is an admission that Ethereum 1.0 is an unstable or incomplete architecture. You can't have the founder claiming the current product, as it stands, is defective long-term—that alone stops you. No big enterprise will trust anything until it's proven rock-solid and stable for at least three years. That's the Lindy effect[1] —time is the ultimate stressor. When Ethereum transitioned to proof-of-stake, the clock started over again, discarding any goodwill generated with the first version.

Ethereum is trying to be a store of value, a crypto asset, and a crypto application platform; it's having an identity crisis. The challenge is that there's no clear value proposition. If Ethereum's vision was to create a crypto application platform, that's fine—I get it. But, it'd be inappropriate to use its token (Ether) as a store of value for a corporate or institutional treasury.

Bitcoin is a crypto asset network that purports to be a store of value. Most people who own Bitcoin know that's good enough—it doesn't have to be

anything more. If we store $100 trillion of value in Bitcoin, we'll be just fine. Ethereum and all the proof-of-stake cryptos are generally overly idealistic. And the idealism ultimately makes them inappropriate as commodities, and subsequently as money.



PART FIVE

BITCOIN

Common Bitcoin Criticisms

Bad for Society		Has Failed		Will Fail		
Dangerous	**Unfair**	**Useless**	**Obsolete**	**Economic**	**Technologic**	**Government**
Scam (ponzi, pyramid)	Excessive energy use	Expensive	High fees	Fee-based model	Miner concentration	Banned
Facilitates crime	Pollution & e-waste	Volatile	Slow	Inelastic supply	Encryption hacked	Taxed
Speculation/ Gambling	Concentrated ownership	No intrinsic value	Limited functionality	Corruptible supply	Internet reliant	Regulated
	Incentivizes hoarding	Unbacked	Duplicable			
		No use case	Complicated			

---

1. ↩ Coined by Albert Goldman and popularized by Nassim Taleb, the Lindy Effect is a concept that suggests the longer something has been in existence, the longer it is likely to continue to exist (assuming it is non-perishable).

On Maximalism

PARADIGM SHIFTS

Sir John Templeton famously said, “The four most dangerous words in finance are: ‘this time it’s different.’” However, Templeton was not a scientist or an engineer. The point is that this time *is* different. Fire is different; water is different; wind is different. Guns, germs, and steel are different. Rockefeller recognized that oil was different. When your strategy is based on a technology or a paradigm shift, it *is*, in fact, different.

Bitcoin is different. That’s why it matters. Those who claim it’s not different don’t understand it—don’t be swayed by them.

DEBUNKING CRITICISMS

> *“Brilliant thinking is rare, but courage is in even shorter supply than genius.”*
>
> —PETER THIEL AND BLAKE MASTERS (*Zero to One*)

In this world, 200IQ people will come up with 100 reasons not to buy Bitcoin. They could write books about everything that could go wrong. But this is not about being smart, it’s about a willingness to acknowledge reality. Spend 100 hours learning about Bitcoin to debunk the 100 criticisms people come up with. Without this, you won’t embrace a new idea.

You need clarity, but you also need courage to adopt Bitcoin. People lacking courage apply their brilliance to apologize for why they’re not going to take the risk. Next, you must do the work, which requires research, study, and careful planning. Then, you can take a risk. And, finally, you have to execute.

Acknowledge reality → Embrace a new idea → Do the work → Take the risk → Execute

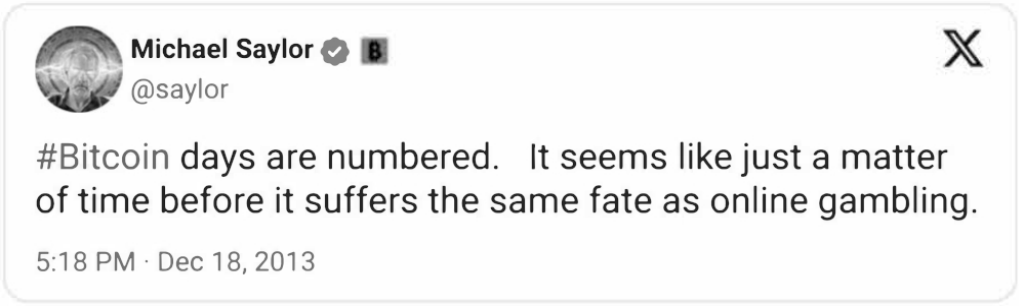
THE FIVE STAGES

Everybody you meet will have a perspective on Bitcoin, and they're going to click through these five gears:

1. **The Denier:** *Bitcoin is a scam, a bubble; it doesn't exist!*

   I would show them a picture of all the Bitcoin miners in the world, which are using more GWs of electricity than the U.S. Navy. This is not a scam; it's the most powerful computer network in the world!

   Don't get dejected that someone may be a denier. **Do you know who used to be a denier? Me.**



2. **The Skeptic:** *It's too good to be true/I'm too late.*

   When people get past comparing Bitcoin to tulip bulbs, they go to the argument that it's too good to be true. That's literally the giga-brain objection! It will solve all their problems *so well* that someone more powerful will just take it away. You have to show that *if* the government were going to ban it, they wouldn't be bragging about seizing $3 billion worth and selling it in the open market. Nor would they have approved spot ETFs or be fighting over who gets jurisdiction.

If Bitcoin is understood to be property (not currency), it won't be banned in a country that gives you property rights. If the world becomes communist and deprives you of the ability to own things, that's an existential risk. But that's not currently a problem in Russia, China, or the U.S. The other concerns are, will it be copied or hacked? It's already been copied 10,000 times. They've all failed! Satoshi has $100 billion in a wallet out there. That's the prize for hacking it, and no one's figured out how. So I know the Bitcoin network is capable of storing $100 billion without anybody taking it.

A common objection you continue to hear is "It's too late to buy Bitcoin!" Henry Ford decided to harness fire for the internal combustion engine a million years after human beings discovered it. It was not too late. Neither is it too late to use the wheel, explosives, the English language, aircraft, electricity, mobile phones, computers, or the internet. It is not too late to buy Bitcoin. Bitcoin is technology. It's never too late to master technology.

3. **The Trader:** *I'll buy it if I think it's going up and sell it if it's going down. Otherwise, I don't have an opinion.*

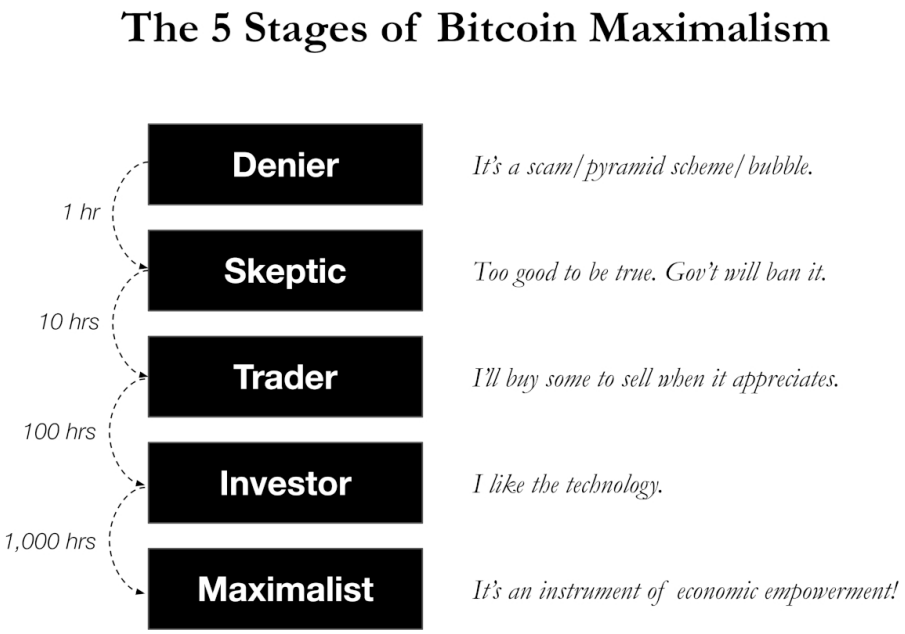
   I became a trader when I looked around at the world and thought, "Everything is kind of messed up. Interest rates are zero, and my dollars are generating zero. I'm going to buy Bitcoin." This is a step up. But, hopefully, you get to the next level: investor.

4. **The Investor:** *Bitcoin is a great technology, like Google, Apple, or Microsoft. It's the future, and I should invest in it!*

   If you made money buying the Magnificent 7, how do you not own Bitcoin? They have the same cycle. This is when you started hearing about me, during my investor stage. After I bought Bitcoin, I started reading a lot more and listening to more podcasts. It was every podcaster, writer, and educator who collectively got me over the line to becoming a maximalist.

5. **The Maximalist:** *Bitcoin is an instrument of economic empowerment!*

This is the last step intellectually.

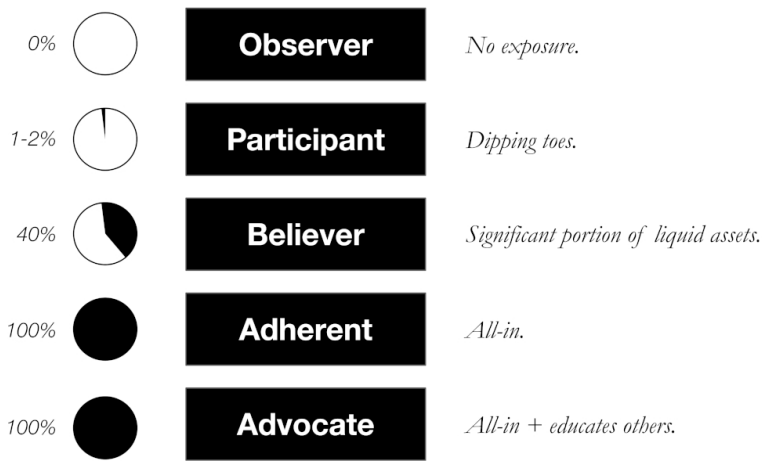


> *"I was a proud skeptic…I studied it, learned about it, and I came away saying, okay, you know, my opinion [of] five years was wrong."* [1]
>
> —LARRY FINK

THE FIVE LEVELS OF ALLOCATION

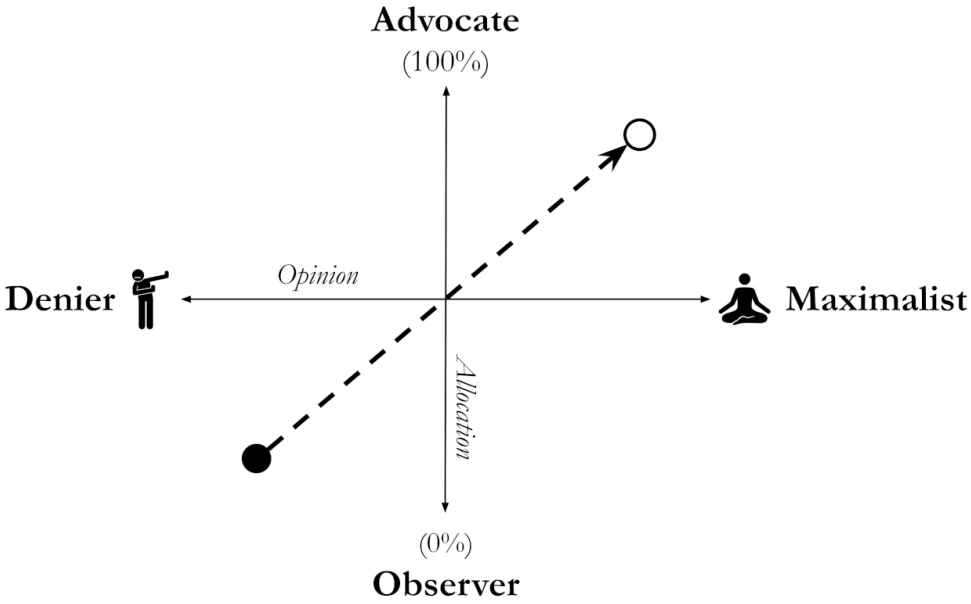
When you're orange-pilling, you're working people intellectually. Everyone starts out as an **observer** (owning no Bitcoin). Then they become **participants**, maybe allocating 1% of their portfolio. Next, they're **believers** and start to put a bunch of their liquid wealth into Bitcoin (perhaps 40% is liquid and the rest is in their house). And at some point, you get to be hardcore—I'll call you an **adherent**. At that point, you're all in; Bitcoin is the only thing you'll invest in. Finally, you become an **advocate**. You're not only all in, you also want to convince your company, your charity, your church, your government, your friends, or your family.

The 5 Levels of Allocation



Bitcoin grows stronger with every new participant at *any* level. You could think of it as a matrix of *Stage x Allocation*. We're working together to move people from the lower left quadrant (denier + observer) to the upper right corner (maximalist + advocate).

Stage x Allocation



And you don’t necessarily stay there. We’ve all got to work together to keep ourselves motivated to be in that quadrant because it can be quite a drain.

Bitcoin represents the digital transformation of capital. What is that worth? That is half of everything in the human race. There’s other stuff: politics, medicine, education, etc. But the digital transformation of capital, energy, and property means that every person, family, corporation, government, and movement can live their best life. **Bitcoin is for everyone.**

I suggest studying Bitcoin, buying Bitcoin, holding Bitcoin, building on Bitcoin, advocating Bitcoin, and defending Bitcoin. Then you can enjoy Bitcoin.

---

1. ↩ CNBC Squawk on the Street, hosted by Jim Cramer, July 15, 2024.

A Treasury Reserve Asset

"Make no little plans; they have no magic to stir men's blood and probably themselves will not be realized. Make big plans; aim high in hope and work, remembering that a noble, logical diagram once recorded will never die..."

—DANIEL BURNHAM (Director of Works, Chicago World's Fair, 1893)

ACT I: THE SETUP

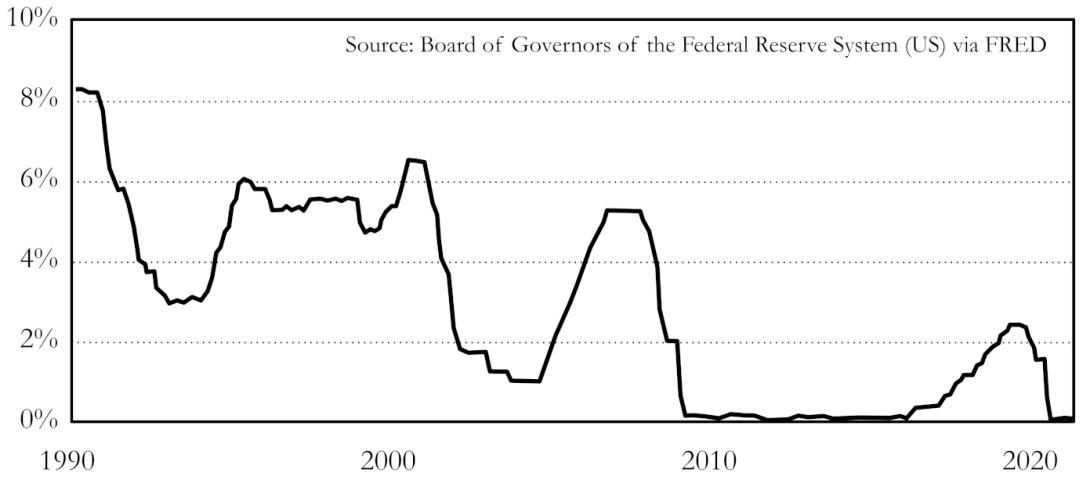
One of my bragging rights is that I was one of the longest-lived public company CEO in my industry at 33 years (1989-2022). Another is I'm the only public company CEO to preside over a 99.8% drop in the stock price and keep his job. I watched my stock go from $333 a share to 42 cents. The lesson is don't spend more money than you're taking in.

Fast forward to 2020, the company had $500 million in cash, and we were making $50 million a year in profit. We were buying back some of our stock and thinking maybe we'd buy another company. We had thousands of people working as hard as possible—sacrificing left and right—squirreling away our pennies. We were very conservative—we had money, no debt, and were ready for a rainy day or to seize an opportunity.

I remember when you could get 5% interest overnight on your money before the Global Financial Crisis—it wasn't that long ago. I kept hoping and waiting for those good times to return, thinking that we'll be making $25 million a year when they did. When interest rates got to 2.5% in 2019, I said, "Finally, they're going to 4% and then 5%. They're going to go back to normal!" And then, of course, my hopes were dashed.

Federal Funds Rate

1990-2021



ACT II: THE CONFRONTATION

The pandemic hit in February 2020. Equities tanked. We were losing momentum, and it was just kind of shock and awe. By Q2, the question was: How does this impact our customers, business, product, and value proposition?

In our case, we sell enterprise software that helps you think better. We sell business intelligence to government agencies, large financial institutions, and global corporations. That's our customer base.

We started on a Monday morning, and by 2 pm, we were using Zoom. By 4 pm, Zoom was the corporate standard. By the way, this is the same CEO that said: "I don't believe in remote work—you've got to show up to the office or else you're not working for me." All of our services went remote and, to our surprise, productivity went through the roof. Our software kept working because the great thing about it is you can ship it over the internet, so our value proposition was intact. Our customers stayed; demand was still there. Our cost structure compressed—$50 million in travel costs, marketing, and trade shows went away. We actually found that we were *more* efficient. That black swan event kicked us into a higher productivity gear.

This was the positive on the P&L[1] side. We realized we're going to generate more cash! But there was no rational business plan to spend $200 million to make the business better. So, we got a gift from the Fed on the macroeconomic side, while simultaneously we were trying to figure out what happens on the P&L. Then, all of a sudden, what do we see? The long bond index went up to 2%. If you would ask me, what's the one investment you do not want to make, I would never in a million years buy a 30-year bond that yielded 2% interest, never, ever. And yet that was a winner in 2020. If you bought a 30-year bond at 2% interest, you got a massive spike when the interest rates went to 0.2%. But our cash sitting in the bank was now yielding zero.

What happened next? Asset price inflation went through the roof. It's twisted because everybody talks about the CPI and says we're not getting *enough* inflation. Well, **you're not getting inflation on streaming subscriptions, or things manufactured by robots at scale, but you are getting inflation on everything scarce and desirable.** An Ivy League education or a house in Miami Beach is going up by 7% per year. A bond that yielded $50,000 per year cost $1 million in the early 2000's. By mid-2020, it cost you $10 million. That's the rate of inflation in assets.

I didn't think much about inflation until it slugged me in the face like a 2x4. When times are good, everybody's busy—there's just too much going on. COVID brought everything to a screeching halt. Municipal bonds went up while every city was bankrupt. Every tech stock went up and the price-to-earnings ratios blew out. The economy went to the worst place I've seen in 30 years. At that point, you start asking yourself: "What is the true inflation rate?"

If you looked at asset inflation over the last decade, it's 7% a year on a nominal basis. In 2020, you could argue it was 25% to 30% based on long-duration government bond indices and equities.

What does that mean to me metaphorically? Well, here's how it felt. I had a lot of cash in the bank, safely yielding 2% to 3%, and I'm ready for a rainy day. Then, some banker sends me a note each month saying the interest rate went down. And it keeps going down until there is *no* interest. Next, it's as

if someone took my cash out of the bank, piled it up on pallets, and started burning 2% of the notes each month. I quickly realized that in 12 months, 25% of the money will be gone! And my next thought was, "What is the point of all this? What am I doing wrong?"

So, how did I discover Bitcoin? I had a mega problem—**I was sitting on $500 million in cash and watching it melt away.** Meanwhile, there was an extraordinary V-shaped recovery in the bond and equity markets. When the asset inflation rate is 10%, generating $50 million in operating income is offset by a $50 million decline in purchasing power on our $500 million. We weren't getting any recognition from our investors or the broader investment community for holding cash. They were smarter than I was; they knew that cash was trash before I did.

We didn't need the cash; we needed to do something with it.

> *"My dear, here we must run as fast as we can, just to stay in place. And if you wish to go anywhere, you must run twice as fast as that."*
>
> —LEWIS CARROLL (*Through the Looking-Glass, and What Alice Found There*)

When we started working through the question: **"What do you do with $500 million in cash you don't need?"** There were all these strongly held views that one should be conservative, invest in short-term treasuries, and not contemplate anything else. **Buybacks** didn't make sense because there's a limit to how fast you can execute. If you go into the market of a thinly traded stock and buy 20% of the daily float, it'll take about four years. If your ice cube is melting by 15% a year, you don't get four years. You have to look at alternatives.

This was a period where every CEO was struggling, had solvency issues, or was being digitally disrupted. They certainly weren't sitting around shooting the breeze; it was all hands on deck. Everybody had a lot of core assumptions (things that were inconceivable one year prior) shaken: how markets behave, consistency in regulations, the international business climate, and balance sheet management. It forced people to become much more open-minded.

ACT III: THE SEARCH

If you had $500 million of cash right now, where would you invest it? What would your laundry list of assets under consideration be? You'd look at everything from real estate, equities, precious metals, and Bitcoin. You just go down the list of hard assets with some inflation hedge-type qualities geared towards more wealth preservation. So let's talk through them.

- **Commercial real estate:** How do you buy $500 million worth of commercial real estate at a fair price, that's not impaired by something currently happening in the economy? How many people want to sell you commercial real estate at a fair price right now? They all think it's still worth what it was worth pre-COVID.

- **Equities:** I'm not so silly as to go buy 20th-century stock (Apple, Amazon, Meta, etc.) It was a good idea in 2012 (if you had done it, you would have made 10 times your money). Not the same idea today. At this point, will Apple go up by a factor of 10 from here? Maybe it doubles or gets cut in half. So, with the best equity in the world, you've got equal upside and downside.

- **Precious metals:** I realized I had to look at silver and gold.

- And **Bitcoin**.

And so we get down to choosing. I already dismissed commercial real estate. I dismissed a market basket of equities—the S&P 500 and the NASDAQ 100—as uncompelling. **I want something that might be cut in half but can increase by a factor of 10—an asymmetric payoff.** That's what any intelligent investor wants. When you bought Amazon in 2011, that's what you were getting. When you bought Apple when the iPhone came out, that's what you were getting. You want a 10x upside. However, here's the catch: **there is no winning investment in a company that's not a technology company.**

Now, I have to give a plug to my friend, Eric Weiss, who runs his own Bitcoin investment advisory. He's telling me what he's doing, and I'm just

dismissing him: “I don’t know about this crazy crypto thing; it sounds like a shell game.” But he just keeps mentioning it, and so I keep thinking about it. Then one day, something clicked.

ACT IV: THE RESOLUTION

There’s a journey that we went through, corporately. Before I could convince anyone on the board or executive team that Bitcoin was the right idea, we needed to collectively be of the opinion that we‘d be generating cash ad infinitum.

I started assigning the Board homework. They all know who Andreas Antonopoulos is. They were all required to watch the debate between Eric Voorhees and Peter Schiff[2], and then read a non-stop stream of essays on macroeconomics and Bitcoin theory (which included *The Bullish Case for Bitcoin* by Vijay Boyapati and pieces by Lyn Alden). The board, general counsel, CFO, and myself are all going down the rabbit hole. Following that is a series of group discussions and one-on-ones. Everybody goes off and does their homework. We all reconvene for more group discussions. We all split off once again: the CFO consults with an array of accountants, the general counsel consults with an array of attorneys, and we all consult with an array of financial advisors and bankers. We come back together, share findings, deliberate, and think very carefully about the appropriate and prudent way to move forward with, or affect, the strategy here.

Before we bought a single Bitcoin, our first step was to put out a press release announcing that we’re considering buying Bitcoin. Our second step was to put out another press release to say we’d buy out the shareholders who don’t like the strategy at a premium, via a tender offer of $250 million. The third step was to announce that we’d bought $250 million in Bitcoin. Then there’s a 20-day period for our shareholders to decide if, and how much, they’ll tender.

When all was said and done, we’d bought $60 million worth of our stock, and we’re now at $310 million. There was another $175 million in our treasury to play with while still keeping some cash in the bank. The next

step was to invest that treasury cash. In the end, 95% of that $500 million was either invested in our stock or Bitcoin, which we accomplished over four to six weeks. I can't give you an exact blow-by-blow regarding acquiring that much Bitcoin for security reasons. But, I can describe how to think about it if you were in my position and running a company.

First, you audition a bunch of institutional-grade exchanges and custodians. You then identify and mitigate all the potential security and technology issues. You build a relationship with their teams and then buy the Bitcoin. Now let's talk about how you acquire a lot of Bitcoin without moving the market. You do it through hundreds of thousands of small transactions, minute by minute, day and night—over many days. **We bought $425 million of Bitcoin and never ran the price. Not by a single dollar.** You'd never know I'm trading against you when I'm in the market. I'm damping volatility to the upside and downside with large sums of money. And as the institutions come in, they'll dampen the volatility further.

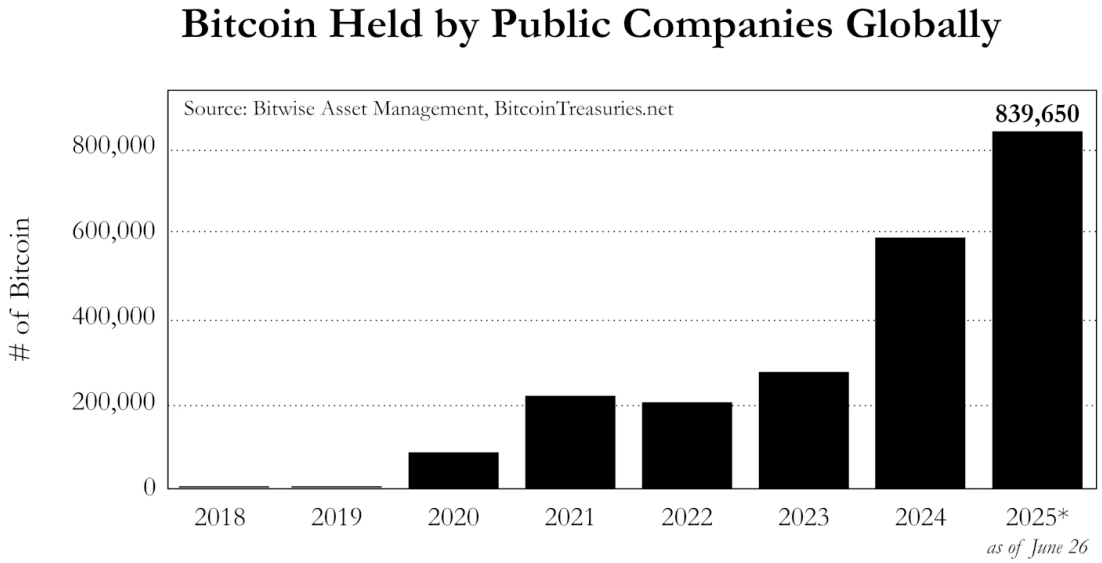
The good news? You can buy in size without being seen, moving the market materially, or panicking anybody. But it takes the right team with the right tools and some discipline. You can't be in a hurry; you have to let the market come to you. I'll watch some guy on a Monday morning who just woke up, decided to buy Bitcoin, and spikes the price. Whenever I see that, I think, "Well, he won't be in the market long." No one who really wanted to buy a lot of Bitcoin would be so silly as to spike the price so hard. That's just not how you get things done.

From the day I decided to buy Bitcoin as an individual, it took six weeks to get through the compliance process. If you're a private company and your team is on board, it's 12 to 18 weeks to jump through the necessary hoops. A publicly traded company that's nimble is looking at six months. And, if you're just a mid-sized public company moving at a normal pace, you would do it in nine to 12 months. When we made our announcement, the six-month countdown started.

It almost has to be a CEO and CFO-led initiative because it's an innovative strategy. But we've demonstrated that it's straightforward and shown people how to do it. As with any feat, if I tell you it's possible, you can go figure it out. All you've got to know is that it *is* possible. It's like running the four-

minute mile: people convinced themselves it was impossible. Then someone does it, and the following year, *dozens* do it.

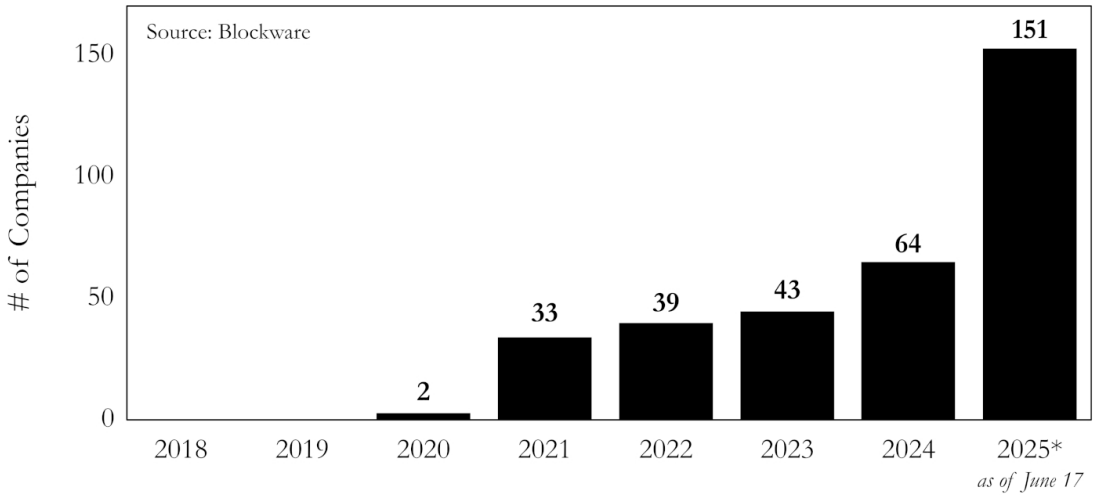
We went from a $500 million company growing 0% per year, competing against a monopoly (Microsoft), to a $50 billion company growing 60%.



I've done many things in my career that were harder than this. Any entrepreneur who's launched a profitable business will have accomplished something harder than this. It will be challenging, but it is within the capability of any competent management team.

The other point that's not lost upon me is that **3,500 publicly traded companies have $5 trillion in their treasuries, and it's all melting.** At some point, you have a fiduciary obligation not to lose the money. It used to be acceptable to be conservative, but that was before the asset inflation rate went from 7% to 30%. When it gets to 30%, it's not something you can ignore. A lot of people are getting catalyzed right now.

Public Companies with Bitcoin on Balance Sheet



---

1. ↩ Profit and Loss statement (a.k.a. Income statement) summarizes revenues, costs, and expenses incurred during a specific period.

2. ↩ 'Is Bitcoin the Future of Money?', Reason and The Soho Forum, July 2, 2018.

Adopting Bitcoin

DEFENSIVE→OPPORTUNISTIC→STRATEGIC

The first stage of my interaction with Bitcoin was **defensive**. We had a problem: the debasement of currency. Our treasury strategy wasn't working in that environment. With that kind of stress, we found a solution: Bitcoin. We invested in Bitcoin to defend our treasury.

Our stock was $12 a share (split-adjusted). We thought that if we bought it back at $14, we'd be able to buy some Bitcoin. Our shareholder base was rotated very carefully. We were going to buy out all of our minority shareholders so that we could pursue this strategy. That was challenging. We didn't know what would happen. Nobody knew what would happen because no company had ever done it before. If you have to agree to buy back $250 million of stock to buy $250 million of Bitcoin, that's a pretty expensive insurance policy.

The next stage was **opportunistic**. Our stock doubled, and we realized we could go out and raise money. And then, if we're going to raise money, maybe we could buy some Bitcoin with the proceeds. What better use of proceeds is there? For the first convertible debt offering, we came to the market wanting to raise $400 million. We got oversubscribed, raising $650 million at 0.75%. That was opportunistic. We used it to buy Bitcoin.

MicroStrategy Completes $650 Million Offering of 0.750% Convertible Senior Notes Due 2025

Press Release • December 11, 2020

Many people still weren't sure what to make of it all. They thought we were taking an obscene risk. But, two months later, it was the best-performing bond issue of the year globally. Our stock had almost increased by 10x, and the bond had tripled. So, we realized this is no longer defensive, and it's more than opportunistic; this is *strategic*. **Our strategy is to acquire and hold Bitcoin**.

So we went through these three stages: defensive→opportunistic→strategic. Strategy's business intelligence unit is growing again (it wasn't when we started this endeavor). It's infused a lot of vitality and energy into the brand. It's good for our employees, shareholders, and customers.

In 2020, nobody knew who we were. Today, that's changed. For instance, the CEO of Microsoft might go on CNBC and get 15,000 views on X. When I go on CNBC, I get 400,000 views. Suddenly, we're more well-known than all these software companies we're competing against. I would say it went from scary to frenetic to fun!

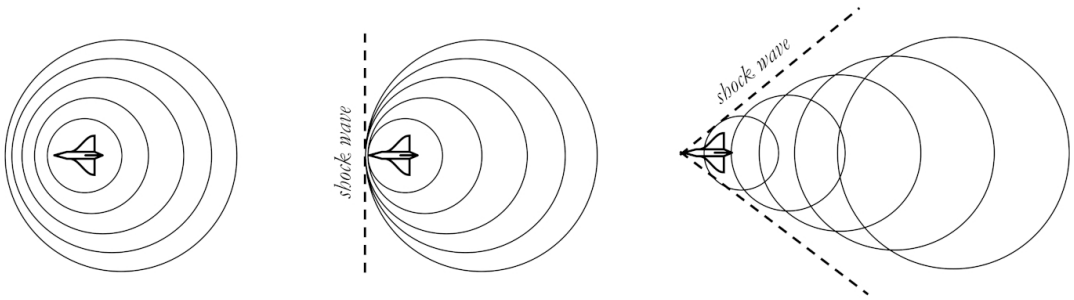
THE SPEED OF ADOPTION

"Slow is smooth, smooth is fast." —U.S. Navy SEALs mantra

There's a certain speed at which an asset can monetize. There's a speed at which Bitcoin can grow, a speed at which we can create ETFs, a speed at which we can give banks guidance to hold the asset, a speed at which we can fix the accounting, and a speed at which we can educate all the senators, members of congress, regulators and mainstream media. There's a speed at which billionaires can figure out the new thing. We often want everything to progress faster. But would you really feel comfortable if Bitcoin was increasing by 500% per year? Or would that be tempting karma?

The metaphor I like to use is a shock wave. Every commercial aircraft flies slower than the speed of sound[1] (the rate at which air communicates with itself). In the 1960s, engineers designed an aircraft—the Concorde—that could fly faster than the speed of sound. It flew for a while, but struggled because it was never profitable. Then one crashed and burned[2], and eventually the aircraft was retired. If an airfoil is moving faster than the speed of sound, air can't get out of the way and creates a shock wave. This results in turbulence (a massive dissipation of energy) and friction. It's like breaking the speed limit that nature gave you. That's when you get shock waves, friction, and things explode.

Shock Waves



Subsonic
<Mach 1

Speed of Sound
Mach 1

Supersonic
>Mach 1

In a hydrodynamic situation, the rate at which a ship can move through the water is called the hull speed. It's determined by the Reynolds number (the aspect ratio of the hull). So, a long hull with a narrow point moves faster

than a wide hull. The cost of going faster than the hull speed of a ship is the cube of the velocity (V^3). **Do you want to go twice as fast? Well, it's eight times more expensive.**

When you try to go faster than that speed, you delaminate. That's when you see sparks. So, it's very healthy if it backs down. North of 100% a year is about as fast as you want to be going. If you have something utterly compelling, hook onto it, hold on, and let that evolve. **I think we've got a decade of that evolution—it just takes that long for a signal to move through the civilization.**

---

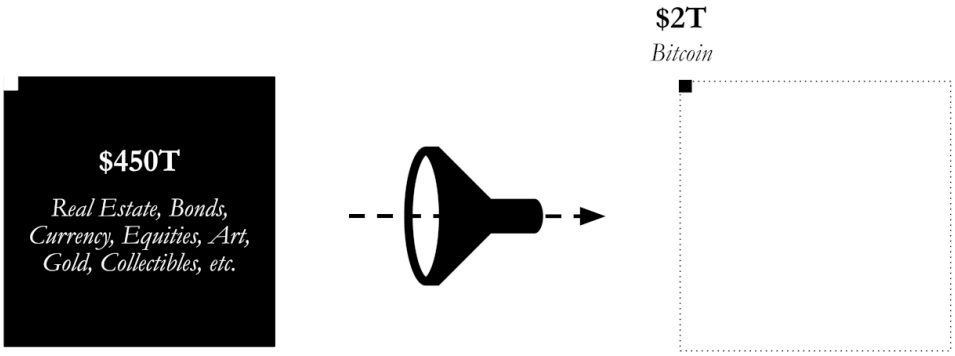
1. ↩ Mach 1, approximately 767 mph (1,235 km/h) at sea level.

2. ↩ Air France Flight 4590 crashed shortly after take-off on July 25, 2000, killing all 109 passengers on board.

Feed the Ducks

If you are an entrepreneur, my general recommendation is not to work yourself to death. Instead, notice that there's $450 trillion of capital stuck in traditional 20th-century assets and there's $2 trillion of capital in Bitcoin. Be the conduit to move the next trillion dollars from the old world to the new. There's a phrase on Wall Street: *If the ducks are quacking, feed them.*

The Digital Transformation of Capital



THE BITCOIN REFINERY

I often get asked if there's a historical precedent for what Strategy is doing. The answer is *yes*.

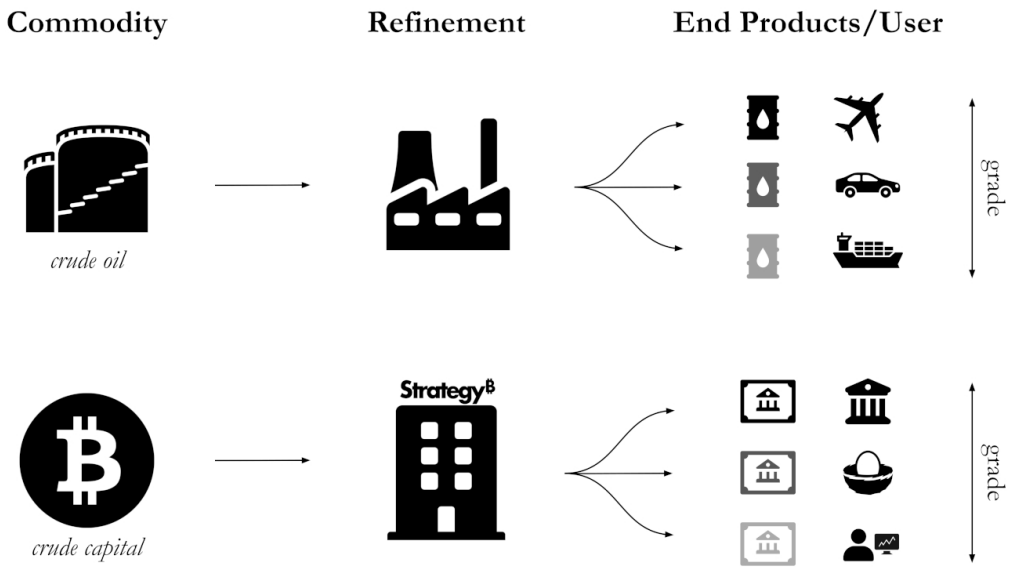
What does an oil company do? It is starting with a commodity containing a lot of energy: crude oil. Everybody wants that energy because they want power, mobility, or to drive human progress. The oil company refines crude oil into products that are either more or less refined.

If you ranked the top seven products derived from the commodity crude oil, the most refined is jet fuel. If you're going to put it in your jet and fly

across the Atlantic, grade is pretty important. You'll pay a lot of money for jet fuel. Gasoline is the next most refined, followed by diesel, liquefied petroleum gas, heating oil, and fuel oil. Then, you get down to asphalt that we put on roads. None of these end users can consume crude oil. You need an oil refining operation which adds value to the crude oil.

What would such a company be worth? You would never value it based on oil reserves alone. It's worth the combination of reserves *plus* the refining operations. You have to figure out how valuable each of the two things is. Today, oil companies are a $10 trillion global asset class.

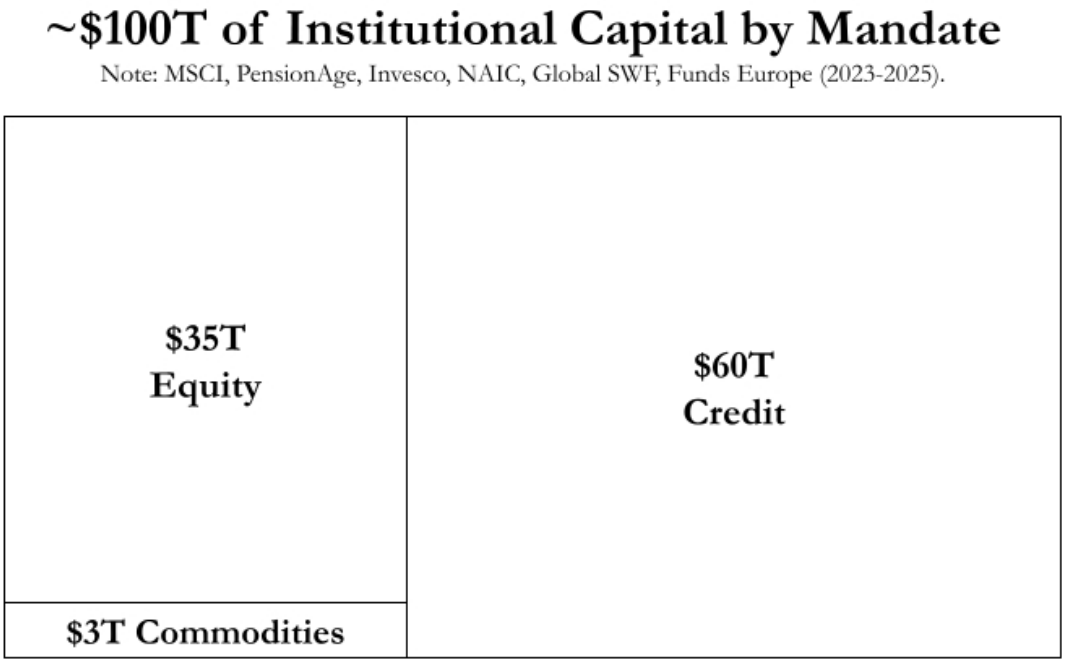
Strategy is securitizing Bitcoin. We add value by creating a wide variety of financial instruments in a refined format, appealing to specific investors with large pools of capital.



We are bridging the crypto economy with traditional capital markets, and this is all made possible by the billions of dollars in Bitcoin we hold on our balance sheet.

Now, why don't those investors just buy Bitcoin? The short answer is they *can't*.

Of the ~$100 trillion of institutional capital[1], 97% of it is mandated to buy equities or credit instruments, not commodities. That translates to 30 times more money that can buy equity or credit instruments which are backed by Bitcoin than to purchase Bitcoin as a commodity.



Adapted from Strategy's $4.2B STRD ATM Investor Presentation, July 7, 2025.

THE LEVERS OF POWER

If you didn't go to business school, let me boil it down to one sentence: "Keep your options open."

Analysts will opine that Strategy is overvalued when the stock trades at a premium to net asset value[2] (NAV). They overlook that we're not a trust company—we're an operating company.

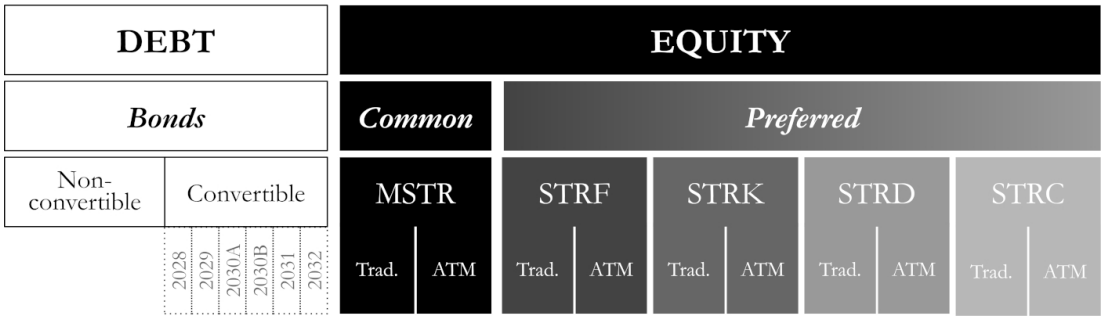
Trust companies, closed-end funds (CEFs), and exchange-traded funds (ETFs) are entities that lack operational flexibility in managing their capital structure. They can't do things like refinance debt, take on leverage,

recapitalize, buy and sell securities, or buy back their stock. Operating companies, on the other hand, can do these things.

What makes our company a monster is the optionality. The more optionality we generate, the more opportunity we have.

Strategy's Levers of Power

**as of July 21, 2025.*



We are raising money from investors and loaning it to the Bitcoin network. For example, plenty of people would like to earn 8% interest. We can sell an instrument that gives it to them, and turn around and invest the proceeds at 29%.[3] When would this not work? Well, it wouldn't work if Bitcoin appreciated by less than 8% *forever* and volatility dropped to *zero*.

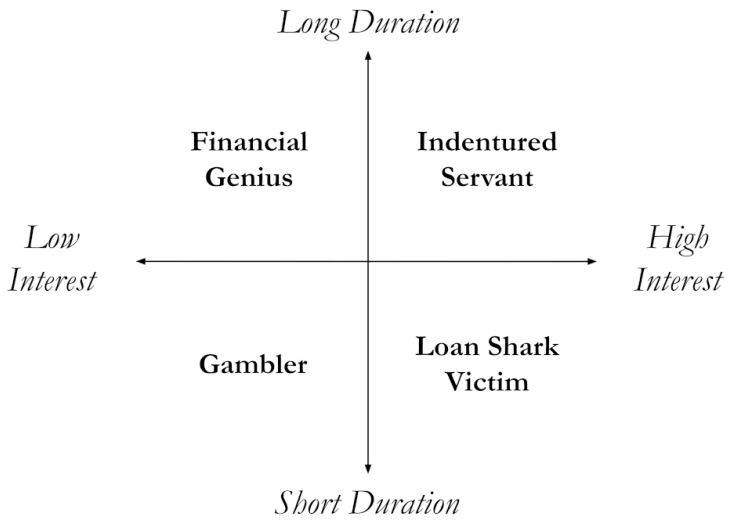
It would be dilutive to the common equity if we sold a fixed credit instrument that paid more than Bitcoin's expected rate of appreciation, and it would be dilutive to issue equity below NAV.

So, how do you achieve this in an intelligent fashion?

If you're borrowing money over a short duration (less than five years), you're a **gambler**, and you risk getting liquidated. But, if you're borrowing short-duration money at a high interest rate (greater than 20%), you'll become a **loan shark victim**. Do not do this—you're going to get your legs broken! Similarly, borrowing money at a high interest rate over a long duration turns you into an **indentured servant**, where you'll have to work your entire life with nothing to show for it.

Instead, what you want to do is borrow money for a long duration (greater than ten years) at a low interest rate (less than 10%). For instance, if you secured a 30-year loan at 3% interest in 2021 to buy Bitcoin, you're a **financial genius**. You're swapping a 3% cost of capital for a 29% return on that capital.

Credit Matrix



If Strategy were to raise $10 billion by offering some kind of coupon, we would be adding $10 billion of assets to the balance sheet. The interest payments would be so de minimis as to be a rounding error. If we became too leveraged, we could turn around and sell equity to delever. It's a continuous back-and-forth of progressive leveraging and deleveraging.

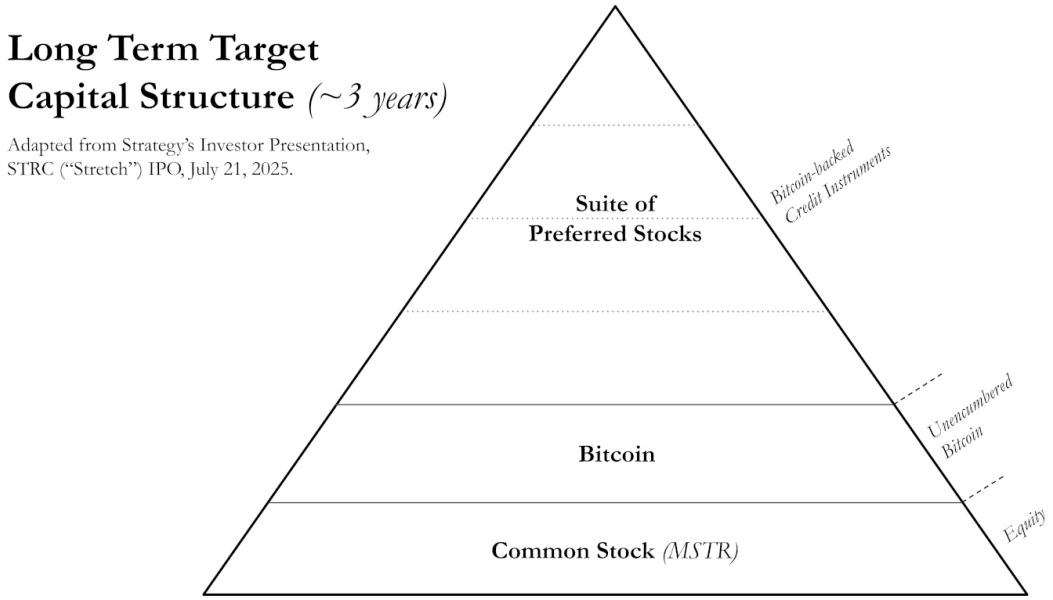
Strategy's leverage ratio (liabilities as a percentage of assets) ranged between 15% to 30% through the first half of 2025. **The problem is not leverage; it's deleverage.** If the price of Bitcoin increases, the leverage ratio falls. Therefore, we're naturally deleveraging at a rate of 29% per year. Bitcoin's price appreciation, the issuance of common equity, and the conversion of debt all contribute to deleveraging.

150% BITCOIN

Here's a simple principle: **trade temporary for permanent.**

Strategy has billions of dollars of permanent Bitcoin capital. BlackRock's Bitcoin Trust (IBIT) has billions of dollars of overnight Bitcoin deposits. **There's a difference between holding billions of dollars in Bitcoin forever versus billions of dollars that people can withdraw tomorrow.**

Strategy has made a strategic decision to securitize Bitcoin as an asset class. We're building up a massive digital capital base that we can leverage, supporting our equity, options, derivatives, and all the fixed-income instruments we issue.



You might ask, "Aren't you taking a lot of risk?!" The only risk we're taking is Bitcoin risk. If we diversify that risk, it would destroy our pure play. We could buy another multi-billion-dollar company today, but that would cut our volatility in half, reduce liquidity, and kill the options and fixed-income markets. The key point here is that only one company can be the leading Bitcoin bank, and to be that company, you must be 150% Bitcoin.

We will live or die based on Bitcoin.

BUYING THE TOP

There's always someone making fun of me for buying the top.

There are people out there who still think Bitcoin is going to zero. They'll gloat from time to time, but I've lived through worse. I survived a 99% drawdown in my stock and stayed in business! This is nothing compared to that.

I have the benefit of 30 years in the software business. I've launched a dozen businesses and gone through dozens of product cycles, navigating all kinds of situations. This is not the first chapter of my life.

Our capital structure is such that we're mostly equity. There are no margin loans, no mark-to-market, and no collateral coverage.

So, yeah, I bought the top. And I'll *keep* buying the top because it's going to *keep* going up.

---

1. ↩ Refers to the financial resources and investments of large organizations, known as institutional investors, such as pension funds, insurance companies, mutual funds, endowments, sovereign wealth funds, and hedge funds.

2. ↩ The total value of an entity's assets minus its liabilities, often expressed on a per-share basis.

3. ↩ Figure equal to Bitcoin's 4-year compound annual growth rate (CAGR) as of June 2025 and stated in Michael Saylor's 2046 forecast at BTC Prague on June 21, 2025.

Lessons from Harvard

Harvard Business School taught the Strategy case study. This is perhaps the greatest business school in the United States—the best and the brightest. The professor calls to say, "We studied the Strategy story, and we'd like you to come in and talk to the class. The students are very excited!" Mind you, this is *after* we'd adopted Bitcoin and after it had worked. Here's what happened…

I joined the class on Zoom and shared our story. I told them the company was at the end of the line. The enterprise was worth $600 million, and the market cap was ~$5 billion. We tried unsuccessfully to grow the business for over a decade. Our investor calls would attract 20 attendees; 19 of whom were employees, and a single retiree. We were at our wits' end. The only alternative was to sell the company: **corporate death.**

Finally, we adopted a Bitcoin standard. The stock price quadrupled, employees made millions, and shareholders made billions. Our strategy was good for Bitcoin, the company, and our customers. A few months later, our market cap was over $30 billion.

The professor said "OK, you've heard the CEO. What do you guys think? Would you do it?" He then took a survey.

First student: "I don't know, seems kind of risky."

Second student: "It seems like an inappropriate use of shareholder funds."

Third student: "This isn't normally done."

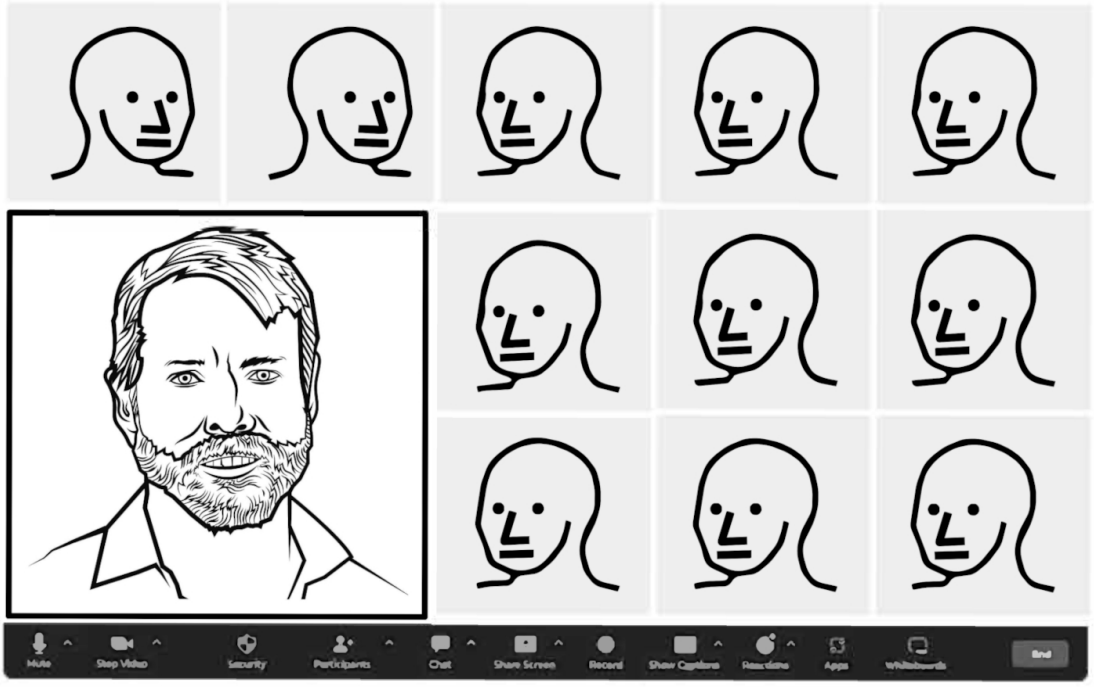
Fourth student: "It kind of violates convention in corporate finance."

Fifth student: "We really can't see any major company doing it."

I swear I watched 10 students, ex post facto, and every single one of them said, "No, we would never do this."

The takeaway? **The world's full of conventional wisdom, conventional thinkers, and conventional institutions.**

You can give them the answer. You can even take the risk for them and *prove* it works. They will just stare at you and not do it.



The one conclusion I've reached is that you can't predict *who* will get it. After all, this is a financial revolution. But I'm happy to live in a world where adoption grows from 1% to 2%, then 4%, 8%, 16%, and beyond. At that point, Bitcoin won't be a $2 trillion asset class—it'll be a $100 trillion asset class. By the time your financial adviser says it's OK to buy Bitcoin, it'll cost $1 million. When they say it's a good idea, it'll be $10 million.

Everybody gets Bitcoin at the price they deserve.

Buy The Future

STRATEGIC BITCOIN RESERVE

Once upon a time, the British looked to the New World[1] and realized it was the future. It would power them to win the Napoleonic Wars and cement them as the greatest Empire of the 17th, 18th, and 19th centuries. The resources (raw materials, grain, trade, and manpower) of the New World fueled the British Empire, just as the gold of the New World fueled the Spanish Empire.

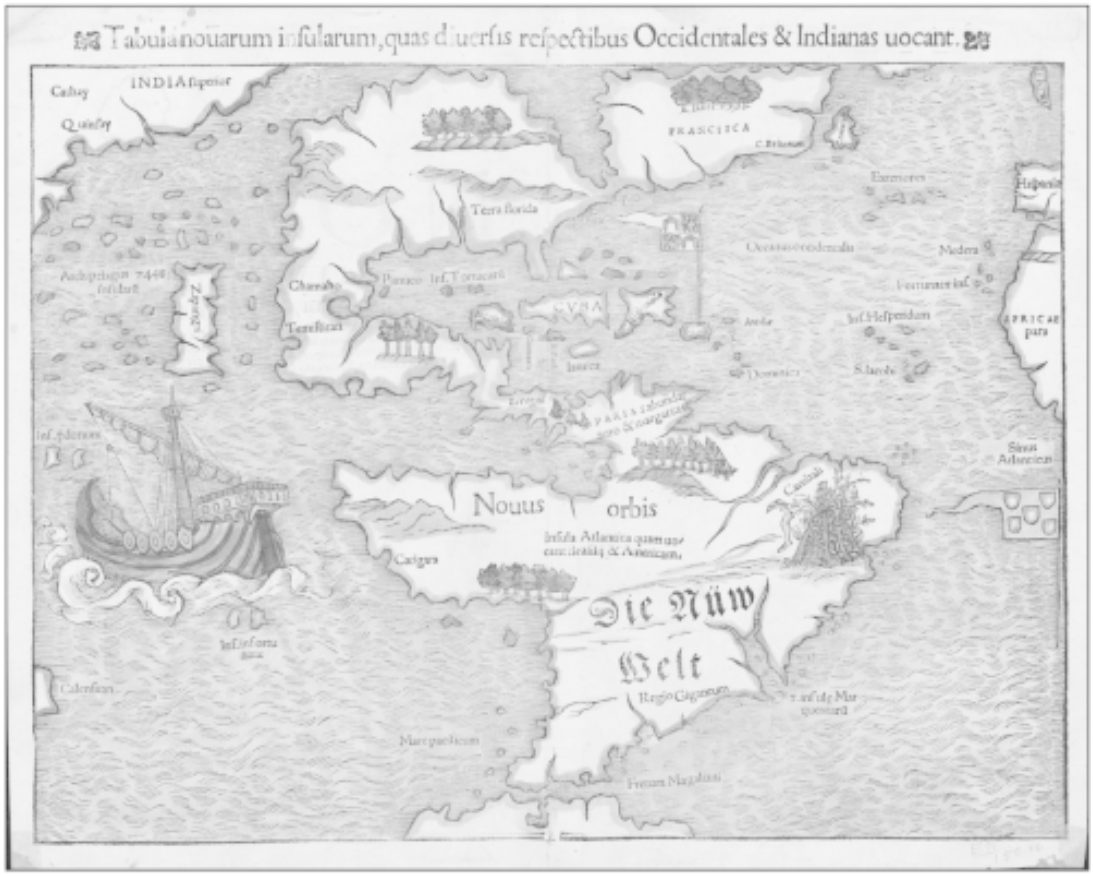


Image: Tabula Novarum Insularum (1540), by Sebastian Münster.

Nations grow by expanding into territories where they can generate extreme prosperity and productivity.

Following the American Revolutionary War, a group of British colonies on the Atlantic coast ('The Thirteen Colonies') realized they needed to go west. As they expanded west, the United States grew into a formidable power. The Louisiana Purchase (1803) doubled the landmass of the United States (the result of Napoleon selling Louisiana to fund a war he would eventually lose). Next was the acquisition of Texas, Nevada, and the Western territories in California. We acquired Alaska (1867) from the Russians, which turned out to have trillions of dollars of minerals and energy underneath it (that is manifest destiny).

Going west turned out to be a good idea. It made America. It created Hollywood, which made us the cultural capital of the world. It created Silicon Valley, which made us the technological capital of the world.

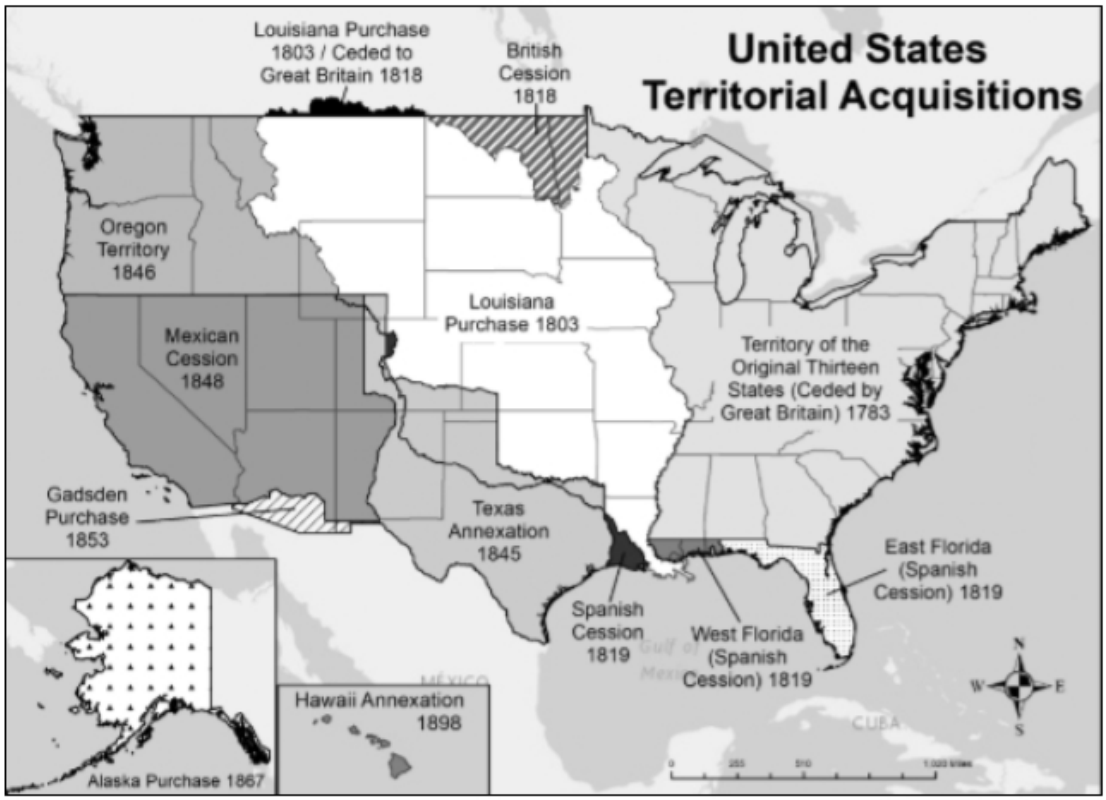


Image: Map of United States Territorial Acquisitions

Today, there's nowhere further west to expand. You need to go up. You need to go into cyberspace. And Bitcoin *is* cyberspace. That's the new frontier. **The logic of the Strategic Bitcoin Reserve is simple: buy the future.**

A 'reserve' sounds like you're buying it just in case, but it's really the Strategic Bitcoin Expansion. You're planting a flag in cyberspace, where all the money in the world is about to head. You might as well get there before the rest of the world. If the United States acquires 20% of cyberspace, all the capital from 19th- and 20th-century assets (such as gold, real estate, bonds, and equities) and from global markets (including China, Russia, South America, Asia, Africa, and Europe) will flow into cyberspace.

Bitcoin will win, but not everyone will win with it.

THE NEXT BEST THING

Everyone uses the United States' sovereign debt. Our allies use it. Our enemies use it. Should anyone decide to recapitalize their company or country on something other than U.S. Treasury bills, they're not returning to gold. They're not going to silver, glass beads, bales of tobacco, or seashells. They're not using their fiat currencies, because every other currency is weaker than the U.S. dollar. They have to go to something stronger, faster, and smarter. They're going to have to go to Bitcoin. You ought to buy it because it's a smart investment. But you should also buy it for when people lose faith in all the other instruments.

WORLD RESERVE CURRENCY VS. WORLD RESERVE CAPITAL

In a post-Satoshi world, money bifurcates into currency and capital. Currency is the medium of exchange; it's the legal tender. The dollar is the world's reserve currency, with everything else pegged to it. The Chinese currency is pegged to the dollar, the Emirati currency is pegged to the dollar, and the euro is almost pegged to the dollar. The United States owns the world's reserve currency, which is a great advantage.

The other aspect of money is capital, a long-term store of value. The wealthy have used real estate, stocks, and the S&P index as capital. Institutions, banks, and operating companies have used sovereign debt as capital. But here's the big idea: those who used real estate and equity as capital (Harvard University's endowment, Bill Gates, etc.) are still rich, while those who use sovereign debt as capital (e.g., banks) are insolvent. Over the past four years, you had –5% nominal yields. Who else uses sovereign debt as capital? Publicly-listed operating companies. They're forced to use weak capital. The U.S. dollar is great as a currency, but not as capital.

Once the United States embraces Bitcoin as the world's reserve capital and builds a Strategic Bitcoin Reserve, **the path is open for U.S. corporations and banks to recapitalize themselves on Bitcoin.** They no longer have to die. Oftentimes, we don't empathize with the despair of a corporation or a bank that is capitalized on a collapsing asset. One percent of the companies in the S&P 500 make all the money, but the others still work hard!

Bitcoin is the future world reserve capital and capital network. The prescription for prosperity in the 21st century is: own the world's reserve capital, run the world's reserve capital network, and benefit from the growth of the world's reserve capital.

FOLLOW THE LEADER

> *"Knowledge by itself is not power, but it holds the potential for power if we use it as a guide for action. The future belongs, not to ideas, but to people who act on those ideas."*
>
> —G. EDWARD GRIFFIN (*The Creature from Jekyll Island*)

It's clear the Overton window is shifting. In 2020, the question was, "Is the U.S. government going to ban Bitcoin?" Now the discussion is, "How much Bitcoin should the U.S. government own or buy?" The BITCOIN Act of 2024[2] is much more profound than buying some Bitcoin. It lays the ethical, economic, and technical foundation to revitalize the banking system, public operating companies, and institutions in the U.S. (and the world). America

will do it first, but every other country will follow. In the same way that when we started building airplanes and airports, they followed, and when we embraced electricity, they followed.

The world wanted John D. Rockefeller's oil. The world wanted Henry Ford's automobiles. The world is going to want Bitcoin.

The smartest thing you can do is buy what everybody else might want before they get there.

THE DIGITAL GOLD RUSH: POINT99[3]

In mid-2025, 19.8 million Bitcoin exist. By 2034, there will be 20.8 million. That's the point where 99% of all the Bitcoin will have been mined.

The last 200,000 Bitcoin will come out over 106 years. What does this mean? There's going to be a reflexive price shock. At Point99, new Bitcoin creation is offset by lost Bitcoin, and the supply effectively becomes fixed. It's the inflection point at which Bitcoin becomes the world's first deflationary asset. There are no textbooks on this, as there's never been anything like it.

You've got less than 10 years to stake your claim—that's the digital gold rush.

---

1. ↩ 16th-century term used to describe the Western Hemisphere (particularly the Americas).

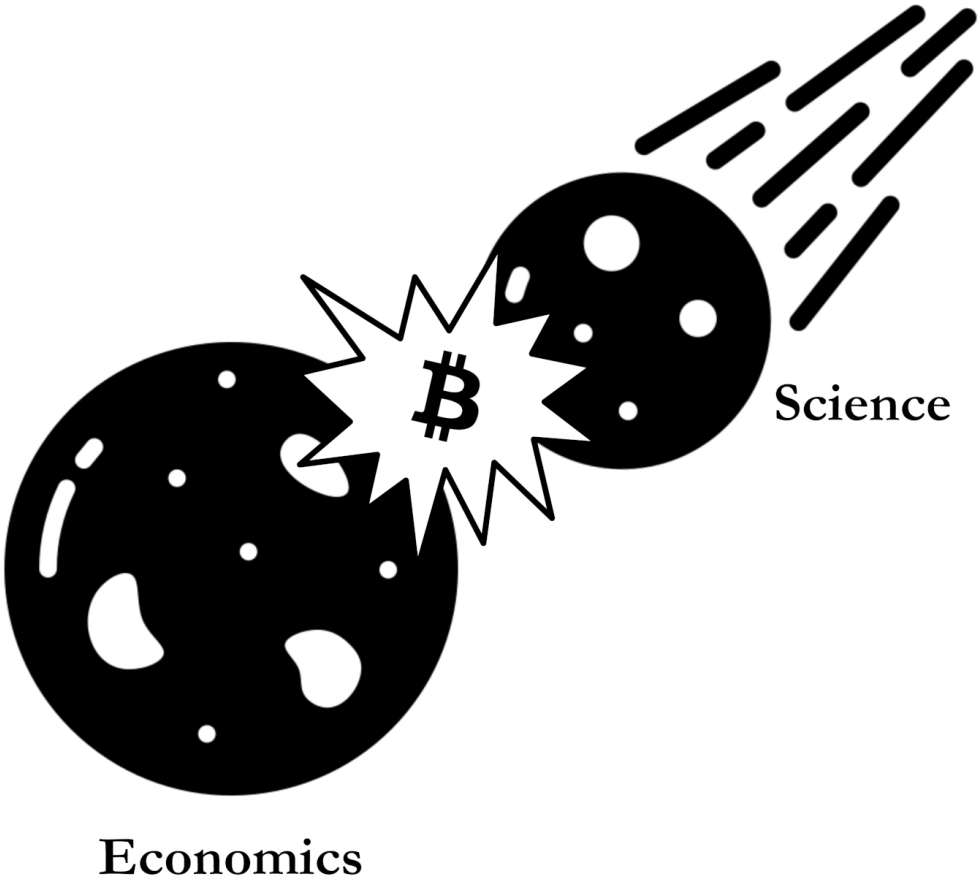
2. ↩ Boosting Innovation, Technology, and Competitiveness through Optimized Investment Nationwide Act of 2024, introduced by Sen. Lummis (R-WY).

3. ↩ Values updated to July 2025 from date of original presentation (September 2024).

21 Rules of Bitcoin

The human race has lived for thousands of years with defective money: seashells, bales of tobacco, glass beads, copper, etc. One day, we'll look back and chuckle at silver tokens and pieces of paper. We'll wonder how the human race got this far.

Bitcoin is the world's first perfect money—a singularity where science collides with economics. Just as science collided with astronomy in the Copernican Revolution, and we realized the Earth wasn't the center of the universe, or when science collided with medicine and we realized that diseases aren't caused by demons. Everything around you is distorted, and you have to break out of your frame of reference to see the world clearly. Albert Einstein did it with general relativity, as did every other great scientist. Satoshi introduced a paradigm shift in economics and monetary thought.



Bitcoin ushers in a new age of economic insight that will profoundly change our political and financial systems and how we think about the world. And everyone has their own rules around Bitcoin. I'm not so presumptuous as to think I know *the* 21 Rules. But here are *my* 21 Rules.

1. **Those who understand Bitcoin buy it; those who don't criticize it.**

   How many people are critical of Bitcoin after spending 100 hours studying it? Can you name one? I can't.

   As with any paradigm shift, everyone talks about it. But it's not clear that one understands something simply by talking about it. When Bitcoin clicks for someone, they won't just talk about it; they'll run, not walk, to buy it. When it clicked for me, I *had* to buy it. The world is full of critics because they have not yet grasped Bitcoin's paradigm

shift. And if it hasn't clicked for someone, they'll have countless criticisms.

2. **Everybody is against Bitcoin before they're for it.**

   Why is this banker or that politician against Bitcoin? The natural reaction of a healthy institution, political system, and intellect is to initially reject new and profound ideas. This should not be discouraging, nor should it be surprising.

3. **You'll never be done learning about Bitcoin.**

   If you think you've understood Bitcoin—you've studied it and you're sure you get it—that means you haven't quite grasped it yet. **You've understood Bitcoin once you realize you'll never fully understand Bitcoin.**

   What is Bitcoin? It's not just the protocol or the software, and it's not just how *you* interact with it. Bitcoin is an economic virus, a monetary virus, and an ideological virus. It's going to ripple through time and space. You have to understand how the existing sets of adopters will interact on the second, third, and fourth layers, and so on. You must consider the people yet to discover Bitcoin and what they'll do with it. You have to contemplate what ten billion people, 100 years from now, will be doing with Bitcoin, through millions of different institutions, across protocols and extensions of Bitcoin that have not yet been conceived or invented.

   When you consider how the idea will ripple through time, space, complexity, and the endless ways humanity can organize itself, you'll grasp the full scope of Bitcoin. How will an artificially intelligent entity, created in 2035, living in cyberspace 50 years from now, and integrating with a million other AIs, use Bitcoin? This is a profound chain reaction. It's a fire in cyberspace. Of course, once you get this idea, you realize that you cannot know everything in the minds of billions of people, millions of corporations, or billions of AIs that are yet to come. With that comes humility and a thirst to keep studying.

People who have embraced Bitcoin realize they'll never be done learning about it. Ever.

4. **Bitcoin is powered by chaos.**

   When you put your money in a bank, you're loaning it to a country.
   When you buy a stock, you're loaning your money to the management team.
   When you buy a building, you're loaning your money to the mayor.

   When you buy Bitcoin, you're loaning your money to the Lords of Entropy and the Gods of Chaos.

   Imagine I gave you lots of money and placed you in Europe before World War II. You then have a choice: you can buy any piece of land, building, art, company, bond, or currency in Europe. You can buy any asset in any country about to be a combatant in World War II or own the one bank in Switzerland holding all the money on behalf of all combatants. If war comes (war is a metaphor for chaos and entropy accelerated), you realize every building may be blown up, every company may collapse, any piece of land may not retain its value, rental contracts may be torn up, and the currencies may all collapse. The greater the chaos, destruction, and devastation, the more valuable that bank becomes.

   The 2nd law of thermodynamics states that you can't stop entropy—it only goes in one direction. Chaos will continue. **Bitcoin is powered by chaos. And chaos will outperform cities, companies, countries, cultures, and everything else.** So, the question becomes, "Are you in the business of benefiting from chaos, or are you trying to stop it?"

5. **Bitcoin is the only game in the casino that we can all win.**

   If you walk into a casino, every game besides poker is rigged against you. And unless you're a professional poker player, that game's rigged against you too. You might find a game in life that you can win at for a while—if you're an expert in a particular business or region—but there is no game that everybody can win all of the time.

Bitcoin is the casino. Anybody that wants to play in that game can keep winning. The only way to lose in the game of Bitcoin is if you don't play or quit too soon (before the odds move in your favor). So walk into the casino, sit down, play the game of Bitcoin, and don't quit. You'll be a loser in every other game over a long enough time horizon because you don't control the house. Even when you think you have a monopoly on the market, the Lords of Entropy will upset your fragile equilibrium.

6. **Bitcoin can't protect you if you don't wear the armor.**

   If you're going to walk through the fire, you wouldn't just protect 1% of your body. It doesn't help to tell everybody you know about Bitcoin if you're too afraid to buy it. It doesn't help to buy it if you don't control it. It doesn't help to control it if you only put 1% of your assets into it and the rest goes to zero. If the 1% increases by a factor of 20 or 100, you'll look back and think it would have been a lot better if 99% of your body hadn't been burned. Perhaps you should have protected more than 1%. Don't leave yourself with an Achilles' heel.

7. **Bitcoin is the one thing in the universe that you can truly own.**

   Bitcoin is information manifested as economic value. The network has to be durable, decentralized, and ethical. But if you find an economically sound, technically sound, and ethically sound crypto network (of which we have one called Bitcoin), then the possession of the keys is ownership of the thing. Everything else you have in your life, you own at the pleasure of someone more powerful than you—whether it's the mayor, the governor, the nation-state, or the corporation. It could be anything or anyone. You think you own it, but you only have it until it's taken away by expropriation, taxation, or regulation. In the absence of all those things, it'll be taken away from you by the passage of time, entropy, and chaos. Except for Bitcoin. This is the one thing that, if you own, the passage of time only makes it more valuable. Chaos only makes it more valuable. Nobody on Earth can take it away from you. It's the first thing in human history you can truly own. It redefines the principle of property.

8. **Everybody gets Bitcoin at the price they deserve.**

   In December 2013, I tweeted that Bitcoin's days were numbered and would probably go the way of online gambling. Bitcoin was $892 at the time. Big mistake! **The decision to buy Bitcoin is an act of humility.** It requires courage to overcome your fears, uncertainty, and doubts, as well as clarity to realize you need to break with your conventions, ceremonies, rituals, and history.

   I started buying at $9,500. I got the price I deserved. But that's okay; I'll still be buying it at $95,000, and I'll be buying it at $950,000. At that point, some talking head on TV will say, "It looks overbought. I think it'll trade down to $800,000." And they'll miss it. Eventually, they will buy it at $8 million and get the price they deserve.

9. **Only buy Bitcoin with the money you can't afford to lose.**

   A classic phrase in investing is to *only invest the money you can afford to lose*. If I ran a casino where the deck was stacked against you, I would put that as the disclaimer in my ads. When you tell people to only invest the money they can afford to lose in your crypto token or investment idea, you're making a moral equivalence to gambling, where the odds are against you. You're essentially saying there's nothing better about what you're offering than any foolish game that you're likely to lose.

   Nobody ever said, "Only put the kids on the school bus if you don't need them to be returned," or "Only fly on my airplane if you don't need to reach your destination." An engineer doesn't say, "Only drive across my bridge if you don't need to reach the other side." And so, what I say is, "Only buy Bitcoin with the money you can't afford to lose."

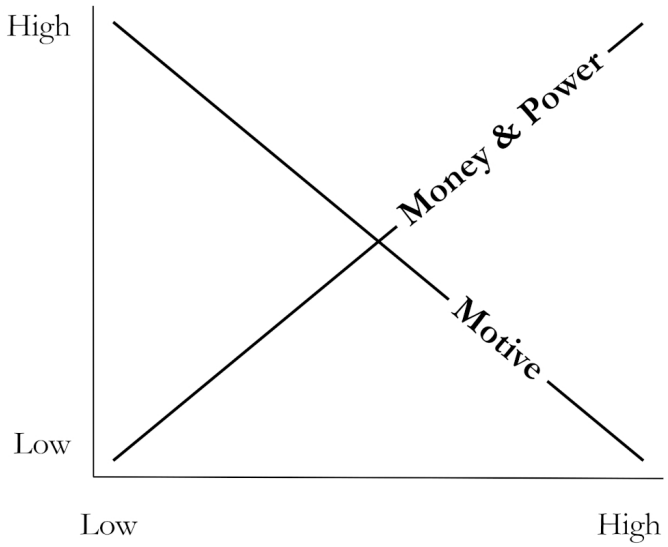
   You shouldn't equate someone's ignorance of Bitcoin with an inability to grasp the concept of perfect money. We didn't invest in it because we wanted to take a risk; we invested in it out of disgust with a world that forces us to take risks with everything else, where the risks are stacked against us and undisclosed. The entire world is defined by a

bunch of synthetic metrics: CPI, PPI, unemployment, GDP, etc. That's the Matrix you're living in. Bitcoin is better. Embrace it.

10. **Tickets to escape the Matrix are priced in Bitcoin.**

    If you don't own Bitcoin, you cannot buy your way out of the Matrix. And until you understand that you need to buy your way out of the Matrix with Bitcoin, you don't understand the Matrix or Bitcoin.

Catch-21: Bitcoin Adoption



11. **Bitcoin insight is restricted to those with a *need to know.***

    There are people with a lot of money and power but no motive. Then there are people with the motive but no money or power.

    The people who don't understand Bitcoin—Warren Buffett, the bankers, and the rich—don't have a need to know. That's why they cannot see it. When you're living comfortably in the Western world, everything seems just fine. But, when your world comes crashing down, then you will see Bitcoin for what it is. So, don't be shocked when people look at Bitcoin and don't understand it.

12. **All your models will be destroyed.**

    When looking backward, statisticians often want to focus on time series of historical data. It's like analyzing soldiers with bows and arrows from 3,000 years ago, and then trying to backtest your models to understand how explosives and aircraft will impact how you organize your formations. The models no longer make any sense in the face of such significant technological advancements. If you understand Bitcoin, you realize you've got to throw them all away when Godzilla shows up.

13. **The cure for economic ill is the orange pill.**

    Bitcoin is perfect money. Once you understand that, you realize everything you've used for money in the past is toxic. The capital and currency you've been putting into your system are doing you harm. You have to stop ingesting them. The orange pill is the cure. We need to spread that cure to the world.

14. **Be for Bitcoin, not against fiat.**

    Bernard Arnault[1] became one of the richest people in the world by selling luxury goods. Now, he's not going to take all his wealth and buy euros or dollars. But Arnault will price his products in local currency, recognizing that people would rather trade their currency for the handbag, champagne, or even Bitcoin. We're in favor of something which is beautiful, elegant, powerful, and inspirational. We don't need to be against the other thing. Ninety-nine percent of all the world's wealth will be held in something other than currency, half of which will probably be in Bitcoin.

15. **Bitcoin is for everyone.**

    Bitcoin is for the people you dislike and disagree with. They are going to buy Bitcoin. The AI bot is going to run on Bitcoin. The robotaxi that took your job is going to run on Bitcoin. You should be happy about that fact, because it will drive up the price of your Bitcoin by a factor of 10, 100, or 1000. You don't have to like them or embrace their

ideology. But you should realize that the more people who join the Bitcoin system, whether they're your enemy, a religion you don't care for, or a country you're at odds with, they're all helping Bitcoin. And if you are true to Bitcoin, they'll be helping you.

16. **Learn to think in Bitcoin.**

    Bitcoin has been appreciating 50% per year for the past four years. This means the risk-free rate (the cost of capital) is 50%. So you have the option to borrow money at 5%, loan it to Bitcoin at 50%, and keep the 45% difference. I'll meet Bitcoin businesses that want to raise money and loan it to a counterparty at 15%. Why would you lend to a counterparty at 15% when you can loan to Bitcoin at 50

    Let's be conservative and say Bitcoin will appreciate 24% per year for the next 10 years. Do you have an investment idea for me that returns more than 24% a year, plus the risk premium, scalably, for the next decade? Most people have the wrong idea in their heads. They don't think in Bitcoin terms, and as a result, they make mistakes.

17. **You don't change Bitcoin. Bitcoin changes *you*.**

    Bitcoin is a swarm of cyber-hornets. It will continue on far beyond your lifetime. It's bigger, stronger, more powerful, and more intelligent than you are.

    Taleb writes about intellectual idiots: people with PhDs in Aeronautical Engineering who give speeches on making birds fly better. If you find yourself lecturing eagles on how to fly, you're the person who thinks you can change Bitcoin. You're not smarter than Bitcoin. You're not smarter than millions of companies, billions of people, and tens of billions of people yet to come. The world is big, the market is big, and you're not going to change it. You'll try, but it would be a lot smarter for you to change yourself.

18. **Laser eyes protect you from endless lies.**

People think “Laser rays to 100” is just a meme, but it’s not. Laser eyes are going to save you. They signify that you’ve got to avoid distractions that dilute your focus.

When the price of Bitcoin goes from $10,000 to $100,000, there will be someone who declares victory, removes their laser eyes and drifts off to launch 16 crappy businesses because they believe they’re a genius. There’s a 99.9% mortality rate on new business ideas, but you’re sure *yours* is going to work? Everyone is going to tell you they’ve got an idea that’s better than Bitcoin. They’ll say that Bitcoin had its run! Pride cometh before a fall.

Bitcoin’s market cap is going from $1 trillion to $10 trillion to $100 trillion to $500 trillion. At that point, it’ll be growing better than everything else. Laser eyes are about humility. Don’t belittle them; embrace them.

19. **Respect Bitcoin, or it'll make a clown out of you.** I came to Bitcoin and spent all my time trying to learn about it. I realize I still don't know everything there is to know about Bitcoin. But I do know that it's bigger than all of us, stronger than all of us, and will outlive all of us. Don't be the person who shows up and says, "I just heard about Bitcoin, and I'm here to fix it!" Have some respect for this thing.

20. **You do not sell your Bitcoin.**

    Bitcoin is energy—conserve it. Bitcoin is life—don't squander it. When the fire keeps your family from freezing, do not let it go out. Satoshi gave you economic energy. You can capture it, own it, and conserve it. Don't throw it away economically. Every time you sold Bitcoin, you gave up the best-performing asset in the world to buy what? Diversification is selling the winner to buy the losers.

    The entire world is constructed to convince you to sell your Bitcoin. Do not sell your Bitcoin! Everything else is inferior. You only sell your Bitcoin when you need it to conserve your life and the lives of those you love.

21. **Spread Bitcoin with love, not hate.**

    Violence invites violence. Aggression inspires resistance. When people don't understand Bitcoin, they're going to be afraid of it and they're going to resist it, for they fear what they do not know. If someone who doesn't like Bitcoin calls it a scam, your reaction ought to be: "They don't have a need to know. They don't understand that the world consists of people who need Bitcoin."

    The best thing to do is politely tell them they don't yet understand it. For if they did, they wouldn't feel that way. Because if you push back with hate, it just slows down their learning path. If you treat them with kindness, they'll remember it and feel remorse. When they eventually discover Bitcoin, they'll come back and embrace it. If you make it easier for people to embrace Bitcoin, they'll do it faster.

Don’t give people the excuse that bitcoiners are mean, rude, or aggressive. Because then the entire topic shifts to a struggle over some irrelevant or tangential thing. Instead, go door to door, person to person, institution to institution, nation to nation, and offer them something that will make their life better. Offer them Bitcoin. And do it with love, not hate!

---

1. ↩ Bernard Arnault is founder, chairman and CEO of Louis Vuitton Moët Hennessy (LVMH), the world’s largest luxury goods company.

Winning Hearts and Minds

CHEERFUL AND CONSTRUCTIVE

Some people clearly don't understand or appreciate Bitcoin the way we do. However, no one will change their mind if you publicly embarrass or insult them. Besides, you're more likely to change someone's mind in private than in public.

The battle is not to change the minds of the "blue checks" (verified influencers) who have already carved out their positions. Instead, it's to capture the hearts and minds of the undecided and unaware. I don't expect to change the mind of someone with a large following who criticizes Bitcoin, but perhaps I can educate their followers.

If a rockstar with two million followers posts something like "Bitcoin is boiling the ocean," I'm not going to reply with an insult. If I did, all of their fans who don't even know what Bitcoin is would immediately view it negatively because I was rude to their favorite musician. So, there's no point in venting frustration or injecting toxicity. If I offer a constructive point of view instead, there's a chance people might actually read and consider it.

My view is that you should be cheerful and constructive on social media. I don't want to make enemies, because they aren't going to support anything I say—they may even push back harder, and I won't have accomplished anything. But the worst thing is not for someone to hate you; it's for them to be indifferent to you and to view you as irrelevant.

I have one agenda: I want everyone who doesn't know about Bitcoin to discover it, and I want everyone who does to understand it better.

FIX THE MONEY, FIX HALF THE WORLD

I think digital energy is worth half of everything. If the world's capital is worth $900 trillion, digital energy is worth $450 trillion. We can call that 'money'. But here's the fundamental point: we have a solution to *half* of everything. We can fix *half* the world; we don't have a solution for the other half.

When the United States went into Afghanistan and toppled the Taliban, what did we replace it with? Did we have a solution for that? How about Iraq? What about a solution to govern Turkey and replace the lira? I don't know how to do that. **All I know is that more Bitcoin is better.**

STAY IN YOUR LANE

What’s basic marketing theory? Stay on brand.

What’s basic political theory? Stay on message.

Do I want to express opinions on Facebook versus Apple? Or how about New Hampshire property taxes? No—I stay in my lane. I'll focus on very tight topics: how regulators view Bitcoin, where it stands compared to other crypto tokens, and the definition of digital property. I'll also emphasize Bitcoin adoption (both institutional and individual), its technology, and education. And if anyone offers me a platform—whether on the left, the right, or in the middle—to share something positive, cheerful, and constructive, I'll take it.

There's only one truly useful thing any of us can do each day when we wake up: convince someone to convert another form of property into Bitcoin. Sell your gold and buy Bitcoin. Sell your bonds and buy Bitcoin. Sell whatever property or asset you have and buy Bitcoin. That's the one thing that matters above all else.

You don't need to change someone's political convictions, religious beliefs, or diet; those are separate battles. Engaging in them is dilutive and distracting. I have thousands of opinions, but the only one I think is worth sharing publicly is: "Bitcoin is good—it's good technology." I don't care who you are or where you're from; you'll be better off with Bitcoin. Your country, religion, family, and company will be better off too. We should welcome everyone into the ecosystem by whichever route they come, while channeling everything constructively toward a laser-like focus on Bitcoin.

THE BEST BRAND

Bitcoin is the most widely held investment asset on the planet. Two hundred million holders have an economic interest in it.

I travel all over the globe. I stepped onto the runway in Switzerland, and the guy in the yellow vest stops me to say he's buying Bitcoin for his daughter who just got married. I walked along a beach in Italy, and a swimmer yelled out my name. I can walk into a room full of billionaires or a blue-collar bar, and they all know who I am. This happens in Uruguay, Greece, Brazil, Mexico, London, New York City, and Asia. Why?

Bitcoin is a sports team with hundreds of millions of fans across every city on Earth, all rooting for the same thing. It's the global economic solution for everybody!

Volatility is Vitality

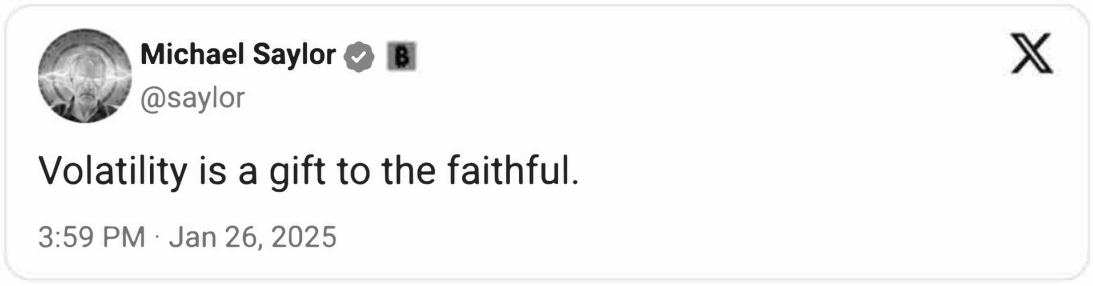
The great irony is that everyone thinks Bitcoin is risky because it's volatile. But it's volatile because it has the *least* risk. Bitcoin is the most liquid, desirable, leverageable, and accessible capital market in the world, meaning everyone is expressing their sentiment every minute of every day.

That volatility attracts traders (who get a superior yield), investors (who get better returns), and financiers (who can securitize the asset class). It fixes the problem for 300 million corporations with a defective capital structure.

> *"I define risk as the probability of a bad outcome, and volatility is, at best, an indicator of the presence of risk. But volatility is not risk."* [1]
>
> —HOWARD MARKS

Volatility is a dirty word. But, **volatility is vitality. It's just the motion.** Lebron James is volatile. There's a difference between moving fast with a lot of energy and taking risks. You want to have the energy—the risk is not having it if the other person does.

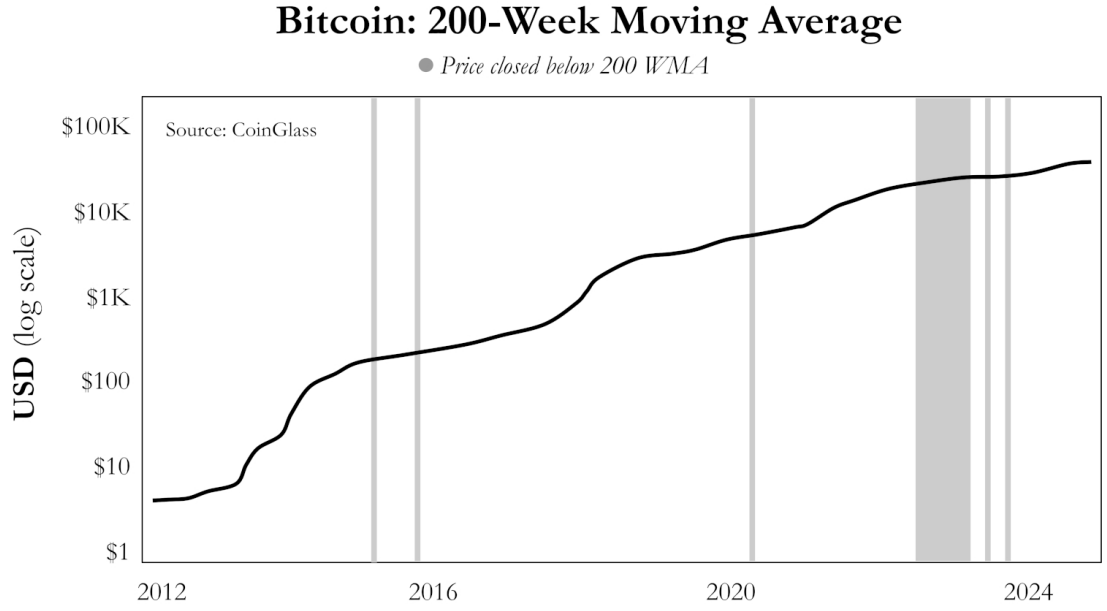
Every other non-volatile asset (i.e., gold, bonds, etc.) has a negative real yield—it's just a question of how much. If you had non-volatile cash that bought 30% less in the span of eight weeks, at that rate, you're not going to make it through the decade. So, the choice is to accept some volatility so that you may live, versus having no volatility and watching the lifeblood drain out of your veins.



Business schools often teach you to strip the volatility from balance sheets and P&L statements. Now, it's okay to strip it off the P&L, but it's not okay to strip it off the balance sheet. Embracing a volatile balance sheet with a stable P&L is a superior strategy. Then you can actually raise capital rather than giving it away (via dividends and buybacks). Before Bitcoin, there was no perfect capital asset, and I understand why companies didn't build balance sheets around it; they simply couldn't. Now they can, and we are in the early stages.

The revolution in corporate finance revolves around a simple idea: volatility is not a bug; it's a feature.

There are bitcoiners who've lived through the last 10 years and are the product of their experience. They're heroes, and I respect them. If you live through something like that, you see through the volatility.

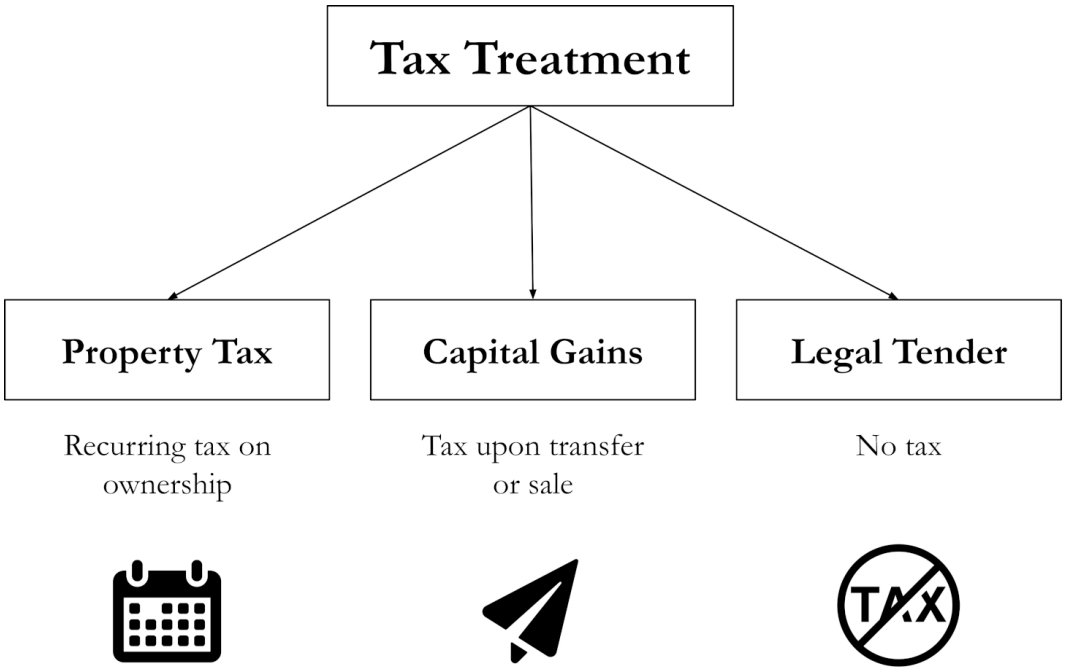


But the next decade won't look like the last. Over the next ten years, institutions will be moving billions of dollars in and out of the market. They'll dampen all the volatility because it's in their interest. So, if there is any volatility, it's going to be to the upside and for the good of everybody.

A TAXING MATTER

The government can destroy any asset through its tax treatment. So, taxes matter a lot!

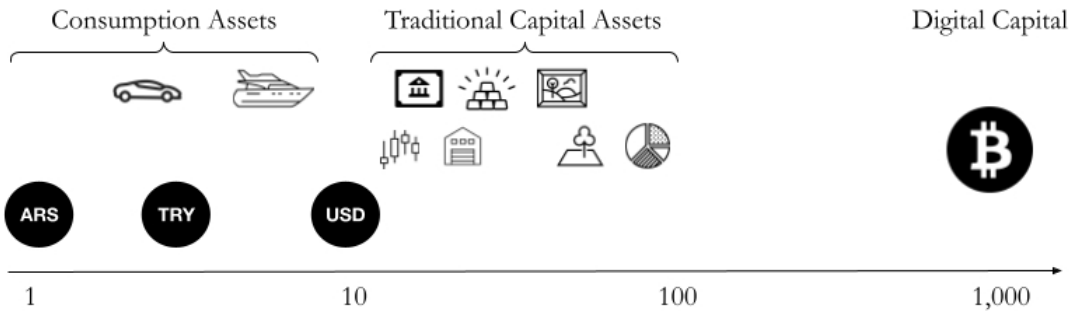
The best treatment is **legal tender**; you can hold and transfer it with no tax. The second best is **capital gains**, a tax on the sale of appreciated property. The worst tax treatment is **property tax,** which is a tax on time; every year, you have to pay a percentage of the total market value, regardless of whether you trade it. Property taxes take your money away in 35 to 40 years. Generally, the best strategies are the ones that allow you to defer or avoid tax, while the worst strategies are the ones that accelerate the tax.



You're more likely to sell your Bitcoin if there's no capital gains tax, but that doesn't mean you should. Selling Apple, Amazon, Google, Facebook, or Microsoft stock at any point in their history would have been a mistake,

even without capital gains taxes. Rather than going through all these contortions trying to minimize your taxes, how about never selling? If you buy the most pristine, technically pure long-duration asset, there's no reason to ever sell it. **Bitcoin will last for 1,000 years. It transcends a company or a country.**

Bitcoin: A Revolutionary Advancement in Capital Preservation



Useful Life (Years)

If you believe in Bitcoin, the only thing you ought to be doing is buying as much Bitcoin as possible. Then you ought to find a bank to lend you money against your Bitcoin on the most favorable terms. Your plan ought to be "I'm never going to pay capital gains tax the rest of my life" to the extent that you can construct an asset-rich portfolio with Bitcoin and live off borrowing against it.

THE WINNING HAND: 21

> *"Current estimates of total worldwide household wealth that I have found range from $100 trillion to $300 trillion. With 20 million coins, that gives each coin a value of about $10 million."*
>
> —HAL FINNEY[2] (January 10, 2009)

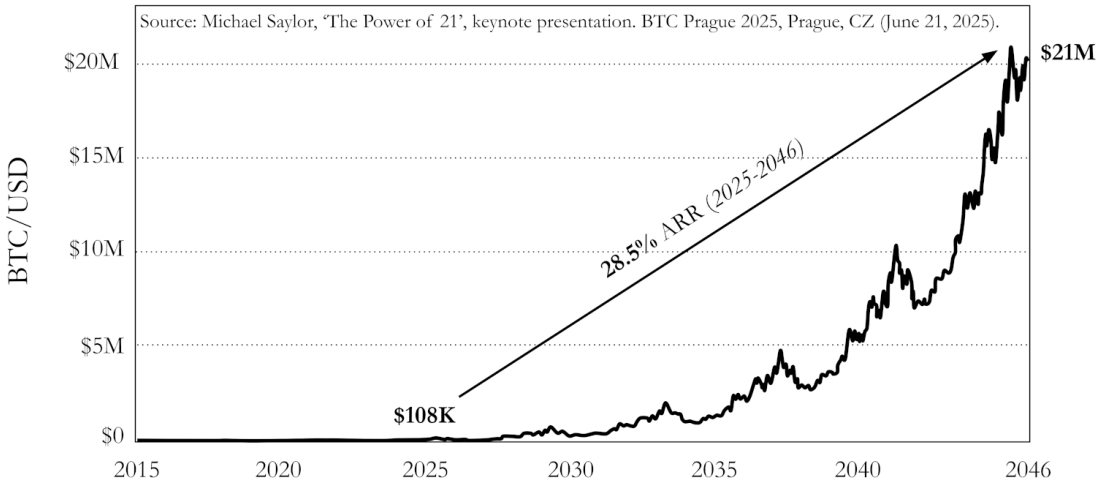
One week after the Bitcoin network launched, a certain genius—Hal Finney — estimated that Bitcoin could reach $10 million per coin. This is incredibly humbling because it took the rest of 16 years and $2 trillion in order to come to the same conclusion.

My Bitcoin prophecy is $21 million per coin in 21 years (2046).

What does that look like? That's 28.5% ARR. I expect Bitcoin will continue to grow exponentially, but as it approaches hundreds of trillions of dollars in market cap, it will decelerate to the point it's growing 21% per year.

The path to $21 million won't be simple. It will be volatile. You've got to be prepared for the surges and drawdowns, the good days and the bad. When you're on a turbulent sea, focus on the horizon. It will calm you and stop you from doing something you'll later regret. To HODL means to ignore the noise. That horizon is 21 years, and on it is $21 million.

Bitcoin's Path to $21 Million Will Be Volatile



How will it compare to alternatives in 21 years' time? It'll still be the best capital asset. It's very important to understand that. Bitcoin will always be pure economic energy (stripped of counterparty risk, a CEO, tariffs, etc.). Nothing else will be able to compete. In 2046, Bitcoin will still be the most valuable thing. You're not going to want to sell it; you'll only wish you had acquired more.

If you're sitting at the blackjack table and magically develop the ability to see blackjack coming, bet big. **When you hold the winning hand, the only way to lose is not to play the game.**

A 21-YEAR HEAD START

You know something the rest of the world has not yet acknowledged: **there's a monetary revolution afoot.**

Volatility is Satoshi's gift to the faithful. If Bitcoin was not volatile, people with more money and power than you would simply outbid you for it. At the point that it becomes predictable, Warren Buffett will say, "We get it. We just bought up all the Bitcoin." **In chaos lies opportunity.** And the only reason you have this opportunity is *because* it's volatile.

If I told you one Bitcoin would be $21 million by tomorrow, the only Bitcoin you'll ever have is what you own right now. Your first thought will be: "I should have bought more!" Your second thought: "It's too late for all my family and friends!" And your third thought: "I don't have time to refinance my house!" The worst thing is knowing what will happen tomorrow.

If I told you Bitcoin will go to $21 million in 21 years, perfectly linearly, with no volatility, that too would be awful. Because every normie that doesn't believe in, or understand, Bitcoin will end up with more than you. You don't want it to be predictable. You want it to be *extremely* volatile. **When the volatility goes away, you'll lose your advantage.**

You've got a 21-year head start. That's a career. It's the ability to do work and build a life for yourself—start a company, raise capital, launch a podcast, etc. You get to prove yourself economically, intellectually, morally, and ethically.

The best way to predict the future is to *create it.*

---

1. ↩ *What Really Matters*, Oaktree Capital Management, Client memo, 22 Nov, 2022.

2. ↩ Harold Thomas Finney II (1956–2014) was the recipient of the first Bitcoin transaction from Satoshi Nakamoto. Message sent in response to Satoshi Nakamoto's announcement of the release of Bitcoin v0.1, to subscribers of The Cryptography Mailing List.

10 Rules for Life

I once attended a social gathering—a large cocktail party at a spectacular villa overlooking the Mediterranean. A multi-billionaire walked up to me and said, “Michael, I want to give my children a book of advice for their 21st birthdays, collected from all of my friends. Would you write down your advice for my future 21-year-olds?” I replied, “Okay, I guess I can do that,” expecting an email in a few months. Instead, he pulled out a pen and a little red book and handed them to me. So I sat down, right then and there, and wrote down these ten things.

1. **FOCUS YOUR ENERGY**

   Everybody overestimates the number of things they can do. You think you can do everything, but you can’t. The things I regret in my life are all the good ideas I pursued to the detriment of my great idea. You will have dozens of good ideas, but do you have the energy to make them all work? So you’ve got to focus. I have laser eyes on my X profile. The message of laser eyes is ‘focus.’ I’m not against 1,000 things, and I’m not in favor of 100 things; I’m simply trying to advocate for one thing. And the one thing is Bitcoin.

2. **GUARD YOUR TIME**

   There are a million ways to spend your time. When I was growing up, we had three TV channels. Today, you’ve got Twitch and YouTube. You could literally spend the next 30 years of your life watching chess videos on YouTube—not playing chess; just watching the videos of other people playing chess. The scourge of modernity is that we have every possible thing we ever thought we might want. We figured out how to manufacture it in bulk, at a pharmaceutical grade, and drive the variable cost to zero.

   When I was growing up, there was no porn. I saw a Playboy magazine once in the woods during my entire childhood, and all the teenage boys would talk about that one magazine. Today, you’ve got infinite porn,

infinite games, infinite music, and infinite books. I had to actually go to the library, check them out, and take them back. There was a limit on the number of books you could borrow. Now, there's no limit. So, ask yourself: how are you going to spend your time?

3. **TRAIN YOUR MIND**

How should you train it? Learn math, learn a language, learn logic—especially logic!—and basic thinking skills. How do you do that? It doesn't necessarily mean you need to go to university. I launched Saylor Academy, where we've provided education to one and a half million students without charging them a nickel—it's absolutely free.

In my opinion, you can probably train your mind better and faster today outside of school. For example, the language options I had in high school were Spanish, French, or Latin. That was it. I could only learn two years' worth, and it was at the same pace as everybody else. So, train your mind and use technology to do it.

> *"Education is the portal to the intricacies of modern life."*
>
> —MICHAEL SAYLOR *(The Mobile Wave)*

4. **TRAIN YOUR BODY**

You don't have to do things that are dangerous or involve excessive risk. I'm not telling you to become a boxer, but I think any kind of healthy training and the patterns you establish are important. It won't seem that important in your 20s and 30s—you can get away with really bad behavior then—but there'll be a greater price to pay in your 40s, getting exponentially worse in your 50s.

If you don't train your body, sometimes the journey is over by the time you reach your 60s. Being able to walk around into your 80s is a function of how you treat your health. If your body goes, your mind will follow soon after, and life won't be that fun.

5. **THINK FOR YOURSELF**

Everybody's going to tell you what to think. Every media organization is in the business of telling you what to think, and generally, they all have an agenda. At some point in your life, you'll read a story and question the agenda of the journalist who wrote it, the media organization that published it, and the nation where the journalist lives. So, assume everything is distorted—it's your job to synthesize and arrive at your own version of the truth.

6. **CURATE YOUR FRIENDS**

Be careful with the company you keep. A bad friendship has ruined many lives. Choose your friends carefully. Choose their values carefully. There are eight billion people on the planet—you have infinite choice. Some people will make you better and lift you up—cherish them. Others will drag you down—run from them. Find three friends who will work well with you.

7. **CURATE YOUR ENVIRONMENT**

Pick an environment that's happy and healthy. Choose where you'll live—city or neighborhood. Choose how you'll live—in a house with green grass or an apartment. Think hard about that; you have more choice than you realize. It will impact your mental and physical health.

For example, the likelihood of being mugged or murdered is closely tied to your pedestrian patterns. If you walk ten blocks through a dangerous neighborhood every day to work, you're a thousand times more likely to be mugged or murdered. Where and how you live make a difference.

8. **KEEP YOUR PROMISES**

Your ability to accomplish things in life is tied to your credibility, and credibility compounds over time. In business, credibility is the difference between success and failure. For example, our stock trades in the public markets every weekday from 9:30 am to 4:00 pm. If people thought I'd act contrary to what I say, billions of dollars of capital would disappear in a heartbeat. The one thing people will

remember about you is if you didn't deliver on a promise. If you lack credibility, people won't want to help you—they might even celebrate your failure. So, don't make promises you can't keep, and always keep the promises you do make.

9. **BE CHEERFUL & CONSTRUCTIVE**

   The world is full of 10,000 ugly and awful things, and you could talk about them endlessly. But, spend three hours doing this with someone, and they'll feel beaten down and exhausted.

   I've lived this life. I'd be with an employee, in a bad mood, saying, 'This isn't working, that's not right, and we could've done this better.' Then I'd offer a suggestion, but I'd already beaten them to death. If you want to accomplish something—whether in a workplace or a friendship—find a way to do it cheerfully and constructively. They need to enjoy and look forward to engaging with you. It works better.

10. **UPGRADE THE WORLD**

    The opportunities in the 21st century are extraordinary. There are a lot of ways to upgrade the world. Figure out how *you're* going to do it.

Reading List

Books mentioned and/or recommended (not exhaustive):

BITCOIN

The Internet of Money *by Andreas M. Antonopoulos (2016)*

I watched a lot of his speeches and read his first book.

The Bitcoin Standard *by Saifedean Ammous (2018)*

The Bitcoin Standard should be required reading for everyone interested in money. The best compliment I can give this book is that I read it and decided to buy $425 million of Bitcoin.

The Bullish Case for Bitcoin[1] *by Vijay Boyapati (2021)*

Gradually, Then Suddenly[2] *by Parker Lewis (2023)*

It kept me up late one night. I didn't want to sleep until I finished it all.

Resistance Money *by Andrew M. Bailey, Bradley Rettler & Craig Warmke (2024)*

A well-researched and thoughtful literary achievement, reminding us that Bitcoin is the best money for everyone because it is brilliantly engineered to serve as money for anyone.

HISTORY

The Story of Civilization *by Will & Ariel Durant (1935-1975)*

Read every volume, beginning to end.

The Structure of Scientific Revolutions *by Thomas S. Kuhn (1962)*

Kuhn introduces this idea of the paradigm shift. What he notes is that when a new paradigm comes along, it's embraced by the youth. And the only reason the adults ever embrace it is due to war.

The Warburgs: The Twentieth-Century Odyssey of a Remarkable Jewish Family *by Ron Chernow (1993)*

Read any history of what the Warburg family—and all Jewish families—went through in 1930s Germany, and what the bankers had to do to move capital out of the country. You get a very poignant, pointed appreciation for the need to have mobile capital.

FICTION

The Moon is a Harsh Mistress *by Robert A. Heinlein (1966)*

The quintessential work by Robert Heinlein, where he coins the phrase "There ain't no such thing as a free lunch." I probably read it when I was nine, so I've always been of that belief.

Have Space Suit - Will Travel *by Robert A. Heinlein (1958)*

This is the book that inspired me to go to MIT.

Atlas Shrugged *by Ayn Rand (1957)*

Ayn Rand's stories are about the individual's struggle against the collective, and they're gripping. I just found it incredibly inspiring. When I first read *Atlas Shrugged*, I couldn't put the book down. It became a 12-, then 14-, then 16-hour-a-day exercise. Human nature doesn't change. That struggle existed a hundred thousand years ago. That struggle exists today. What does change is technology. A hundred thousand years ago, an enraged human being could kill 10 other people. And today, an enraged human being can

kill 100 million people. So, as technology advances, our thoughts about ethics, morality, technology, and civility have to evolve. Ayn Rand does such a good job of articulating the human misery that occurs when someone tries to use brute force to interfere with the order of nature. Atlas Shrugged has always stood for rationality, order, and life.

AUSTRIAN ECONOMICS

The Creature from Jekyll Island *by G. Edward Griffin (1994)*

What Has Government Done to Our Money? *by Murray N. Rothbard (1963)*

When I was in college, it popped up, and I was driven a little bit into Austrian economics. I generally agreed with all of that. I mean, it doesn't take a huge amount of education to get the idea that capitalism, fairness, and market-clearing mechanisms make sense.

Conceived in Liberty *by Murray N. Rothbard (1979)*

I recommend that anybody interested in history read Conceived in Liberty. Rothbard wrote a very detailed history of the colonies before the Revolutionary War, from the perspective of an Austrian economist. He takes you through this step by step. You realize politics is a way to channel power, and it's by constructing a centralized political authority.

An Austrian Perspective on the History of Economic Thought *by Murray N. Rothbard (1995)*

WHAT YOU SHOULD READ

I think three general categories will position you to make rational decisions in the modern world: **economic theory** (from an Austrian perspective), the **biographies of innovators** (i.e., Rockefeller, Carnegie, Morgan, Mellon, Edison, Newton, Leibniz, Voltaire, etc.), and **general history**.

I wish I had studied even more history. Much of it is just a story (history; *his story*), shaped by those who record it. Alexander the Great ensured his legacy by taking Callisthenes with him on campaigns. That's why Alexander is *the Great*—he hired a historian to write a book about him. There are 10,000 stories from 10,000 points of view. The Maya, Romans, Aztecs, and every other civilization craft narratives in which they are the heroes and others are the villains. If you read enough history, you'll become more empathetic and better equipped to understand current events.

> *"Whoever considers the past and the present will readily observe that all cities and all peoples are and ever have been animated by the same desires and the same passions; so that it is easy, by diligent study of the past, to foresee what is likely to happen in the future in any republic..."*
>
> —NICCOLÒ MACHIAVELLI (*The Discourses*)

→Additional books listed at **hope.com**

---

1. ↩ Originally published as a long-form essay in 2018.

2. ↩ Originally published as a series of essays between 2019 and 2020.

References

0. Founding Strategy

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did*.

Pompliano, A. (Host). (2020, September 16). *Michael Saylor on buying Bitcoin with his balance sheet* (No. 385) [Audio podcast episode]. In *The Pomp Podcast*.

Ch.1

Microstrategy Q3 2024 Earnings Call.

Ch.2

Breedlove, R. (Host). (2023, May 17). *The nature of energy with Michael Saylor* (No. 314) [Audio podcast episode]. In *The What is Money Show*.

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Ch. 3

Breedlove, R. (Host). (2020, November 20). *The Saylor series #1: The rise of man through the Stone and Iron Ages* (No. 1) [Audio podcast episode]. In *What is Money? Show.*

Ch. 4

Breedlove, R. (Host). (2023, May 17). *The nature of energy with Michael Saylor* (No. 314) [Audio podcast episode]. In *The What is Money Show*.

Ch. 5

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin*

Fundamentals. The Investor's Podcast Network.

Ch. 6

Breedlove, R. (Host). (2020, November 20). *The Saylor series #1: The rise of man through the Stone and Iron Ages* (No. 1) [Audio podcast episode]. In *What is Money? Show.*

Breedlove, R. (Host). (2020, December 21). *The Saylor series #4: Bitcoin: The first digital monetary energy network* (No. 4) [Audio podcast episode]. In *The What is Money Show.*

Brennan, M. (Host). (2025, January 23). *CEO reception with Michael Saylor & Morgan Brennan* [Conference session]. ICR Conference 2025.

Diamandis, P. (Host). (2024, March 26). *The future of Bitcoin w/ Michael Saylor* (No. 92) [Audio podcast episode]. In *Abundance 360 Summit, Moonshots*.

Jilch, N. (Host). (2024, June 19). *The lifeblood of civilizations* [Fireside chat]. BTC Prague 2024.

Saylor, M. (2024, July 26). *The Bitcoin revolution: Rebuilding the global economy with digital capital* [Keynote address]. Bitcoin 2024, Nashville.

Ch. 7

Breedlove, R. (Host). (2020, December 21). *The Saylor series #4: Bitcoin: The first digital monetary energy network* (No. 4) [Audio podcast episode]. In *The What is Money Show*.

Breedlove, R. (Host). (2021, September 6). *The Saylor series #10: The death of gold* (No. 44) [Audio podcast episode]. In *The What is Money Show.*

Brunell, N. (Host). (2024, November 18). *Michael Saylor on Bitcoin, the red wave, the future of crypto and building wealth* [Audio podcast episode]. In *Coin Stories.*

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Diamandis, P. (Host). (2024, March 26). *The future of Bitcoin with Michael Saylor* (No. 92) [Audio podcast episode]. In *Abundance 360 Summit, Moonshots*.

Jilch, N. (Host). (2024, June 19). *The lifeblood of civilizations* [Fireside chat]. BTC Prague 2024.

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas.

Saylor, M. (2025, March 11). *Strategic Bitcoin reserve: A strategy for U.S. digital supremacy* [Keynote address]. Bitcoin for America Forum, Washington, D.C., Bitcoin Policy Institute.

Ch. 8

Bhatia, N. (Host). (2022, October 21). *Bitcoin as property: What perfection looks like* [Audio podcast episode]. In *The Bitcoin Layer.*

Breedlove, R. (Host). (2021, January 16). *The Saylor series #9: Economics, inflation, interest rates, and natural competition* (No. 9) [Audio podcast episode]. In *The What is Money Show.*

Livera, S. (Host). (2020, September 21). *Bitcoin dematerializes money* (No. 213) [Audio podcast episode]. In *The Stephan Livera Podcast.*

McCormack, P. (Host). (2024, May 25). *Bitcoin is forever money* (No. 817) [Audio podcast episode]. In *What Bitcoin Did.*

Pompliano, A. (Host). (2020, September 16). *Michael Saylor on buying Bitcoin with his balance sheet* (No. 385) [Audio podcast episode]. In *The Pomp Podcast.*

Pysh, P. (Host). (2020, December 22). *Masterclass in economic calculation* (No. 5) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Robles, A. (Host). (2021, March 10). *Michael Saylor on economics, Bitcoin and decision making* [Audio podcast episode]. In *Family Office Association.*

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas.

Ch. 9

Breedlove, R. (Host). (2021, September 6). *The Saylor series #10: The death of gold* (No. 44) [Audio podcast episode]. In *The What is Money Show*.

Ch. 10

Breedlove, R. (Host). (2020, December 7). *Technology themes through history—Harder, smarter, faster, stronger* (No. 3) [Audio podcast episode]. In *The What is Money Show, The Saylor Series.*

Brunell, N. (Host). (2024, November 18). *Michael Saylor on Bitcoin, the red wave, the future of crypto and building wealth* [Audio podcast episode]. In *Coin Stories*.

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas.

Saylor, M. (2024, July 26). *The Bitcoin revolution: Rebuilding the global economy with digital capital* [Keynote address]. Bitcoin 2024, Nashville.

Ch. 11

Breedlove, R. (Host). (2020, December 21). *The Saylor series #4: Bitcoin: The first digital monetary energy network* (No. 4) [Audio podcast episode]. In *The What is Money Show*.

Breedlove, R. (Host). (2021, September 6). *The Saylor series #10: The death of gold* (No. 44) [Audio podcast episode]. In *The What is Money Show.*

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Pompliano, A. (Host). (2020, September 16). *Michael Saylor on buying Bitcoin with his balance sheet* (No. 385) [Audio podcast episode]. In *Pomp Podcast.*

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas.

Scaramucci, A. (Host). (2021, January 19). *Michael Saylor: The importance of Bitcoin* (No. 141) [Audio podcast episode]. In *SALT Talks.*

Ch. 12

Bhatia, N. (Host). (222, October 21). *Bitcoin as property: What perfection looks like* [Audio podcast episode]. In *The Bitcoin Layer.*

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas.

Ch. 13

Bhatia, N. (Host). (2023, February 15). *The 24 risks of equities* [Audio podcast episode]. In *The Bitcoin Layer*.

Ch. 14

Bhatia, N. (Host). (2022, October 21). *Bitcoin as property: What perfection looks like* [Audio podcast episode]. In *The Bitcoin Layer.*

Bhatia, N. (Host). (2023, February 15). *The 24 risks of equities* [Audio podcast episode]. In *The Bitcoin Layer.*

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Diamandis, P. (Host). (2024, March 26). *The future of Bitcoin w/ Michael Saylor* (No. 92) [Audio podcast episode]. In *Abundance 360 Summit, Moonshots.*

McCormack, P. (Host). (2024, May 25). *Bitcoin is forever money* (No. 817) [Audio podcast episode]. In *What Bitcoin Did.*

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas, NV.

Ch. 15

Brunell, N. (Host). (2024, November 18). *Michael Saylor on Bitcoin, the red wave, the future of crypto and building wealth* [Audio podcast episode]. In *Coin Stories*.

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Jilch, N. (Host). (2024, June 19). *The lifeblood of civilizations* [Fireside chat]. BTC Prague 2024, Prague, CZ.

Lee, C. (Host). (2025, March 25). *Bitcoin's $200T future: CoinDesk spotlight with Michael Saylor* [Video]. CoinDesk.

Odell, M. (Host). (2024, July 26). *Saylor x Odell fireside* [Fireside chat]. Citadel Dispatch, Bitcoin Park, Nashville, TN.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas, NV.

Saylor, M. (2025, March 11). *Strategic Bitcoin reserve: A strategy for U.S. digital supremacy* [Keynote address]. Bitcoin for America Forum,

Washington, D.C., Bitcoin Policy Institute.

Ch. 16

Breedlove, R. (Host). (2020, December 7). *Technology themes through history—Harder, smarter, faster, stronger* (No. 3) [Audio podcast episode]. In *The What is Money Show, The Saylor Series.*

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Pompliano, A. (Host). (2020, September 16). *Michael Saylor on buying Bitcoin with his balance sheet* (No. 385) [Audio podcast episode]. In *The Pomp Podcast.*

Saylor, M. (2025, June 21). *The power of 21* [Keynote address]. BTC Prague 2025, Prague, CZ.

Scaramucci, A. (Host). (2021, January 19). *Michael Saylor: The importance of Bitcoin* (No. 141) [Audio podcast episode]. In *SALT Talks.*

Ch. 17

Breedlove, R. (Host). (2020, November 20). *The Saylor series #1: The rise of man through the Stone and Iron Ages* (No. 1) [Audio podcast episode]. In *What is Money? Show*.

Breedlove, R. (Host). (2023, May 17). *The nature of energy with Michael Saylor* (No. 314) [Audio podcast episode]. In *The What is Money Show*.

McCormack, P. (Host). (2024, May 25). *Bitcoin is forever money* (No. 817) [Audio podcast episode]. In *What Bitcoin Did.*

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Saylor, M. (2025, March 20). *The 21 truths of Bitcoin* [Keynote address]. Digital Asset Summit 2025, New York City, NY, Blockworks.

Ch. 18

Breedlove, R. (Host). (2020, November 20). *The Saylor series #1: The rise of man through the Stone and Iron Ages* (No. 1) [Audio podcast episode]. In *What is Money? Show*.

Breedlove, R. (Host). (2021, September 6). *The Saylor series #10: The death of gold* (No. 44) [Audio podcast episode]. In *The What is Money Show.*

Diamandis, P. (Host). (2024, March 26). *The future of Bitcoin w/ Michael Saylor* [Audio podcast episode]. In *Abundance 360 Summit*. (Los Angeles, CA).

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

McCormack, P. (Host). (2024, May 25). *Bitcoin is forever money* (No. 817) [Audio podcast episode]. In *What Bitcoin Did.*

Ch. 19

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Lee, C. (Host). (2025, March 25). *Bitcoin's $200T future: CoinDesk spotlight with Michael Saylor* [Video]. CoinDesk.

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas, NV.

Saylor, M. (2024, July 26). *The Bitcoin revolution: Rebuilding the global economy with digital capital* [Keynote address]. Bitcoin 2024, Nashville, TN.

Saylor, M. (2024, September 11). *The digital gold rush* [Keynote address]. H.C. Wainwright Annual Global Investment Conference, New York City, NY.

Ch. 20

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did*.

McShane, A. (Host). (2021, October 9). *Michael Saylor: The predator prey dynamics of Bitcoin* [Audio podcast episode]. In *Bitcoin Magazine.*

Odell, M. (Host). (2024, July 26). *Michael Saylor x Matt Odell fireside chat* [Fireside chat]. Bitcoin Park, Nashville, TN.

Bet-David, P. (Host). (2024, November 18). *MicroStrategy's Michael Saylor: Bitcoin to $13M? MicroStrategy's $4B Bitcoin bet* (No. 508) [Audio podcast episode]. In *PBD Podcast*. Valuetainment Media.

Saylor, M. (2024, September 11). *The digital gold rush* [Keynote address]. H.C. Wainwright Annual Global Investment Conference, New York City, NY.

Saylor, M. (2025, March 11). *Strategic Bitcoin reserve: A strategy for U.S. digital supremacy* [Keynote address]. Bitcoin for America Forum, Washington, D.C., Bitcoin Policy Institute.

Ch. 21

Breedlove, R. (Host). (2023, May 17). *The nature of energy with Michael Saylor* (No. 314) [Audio podcast episode]. In *The What is Money Show.*

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

McShane, A. (Host). (2021, October 9). *Michael Saylor: The predator-prey dynamics of Bitcoin* [Audio podcast episode]. In *Bitcoin Magazine.*

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Ch. 22

Breedlove, R. (Host). (2020, December 28). *The Saylor series #6: Digital gold: Harder, smarter, stronger, and faster* (No. 6) [Audio podcast episode]. In *The What is Money Show.*

Breedlove, R. (Host). (2023, May 17). *The nature of energy with Michael Saylor* (No. 314) [Audio podcast episode]. In *The What is Money Show*.

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Saylor, M. (2025, March 11). *Strategic Bitcoin reserve: A strategy for U.S. digital supremacy* [Keynote address]. Bitcoin for America Forum, Washington, D.C., Bitcoin Policy Institute.

Ch. 23

Bhatia, N. (Host). (2023, February 15). *The 24 risks of equities* [Audio podcast episode]. In *The Bitcoin Layer.*

Breedlove, R. (Host). (2020, December 7). *Technology themes through history—Harder, smarter, faster, stronger* (No. 3) [Audio podcast episode]. In *The What is Money Show, The Saylor Series.*

Livera, S. (Host). (2020, September 21). *Bitcoin dematerializes money* (No. 213) [Audio podcast episode]. In *Stephan Livera Podcast.*

Pompliano, A. (Host). (2020, September 16). *Michael Saylor on buying Bitcoin with his balance sheet* (No. 385) [Audio podcast episode]. In *The Pomp Podcast.*

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas.

Ch. 24

Livera, S. (Host). (2020, September 21). *Bitcoin dematerializes money* (No. 213) [Audio podcast episode]. In *Stephan Livera Podcast.*

Pysh, P. (Host). (2022, October 12). *Michael Saylor's deep dive on Bitcoin energy misconceptions* (No. 99) [Audio podcast episode]. In *Bitcoin Fundamentals*. The Investor's Podcast Network.

Ch. 25

Diamandis, P. (Host). (2024, March 26). *The future of Bitcoin w/ Michael Saylor* (No. 92) [Audio podcast episode]. In *Moonshots*. Abundance 360 Summit.

Saylor, M. (2024, March 1). *Bitcoin is for everyone* [Keynote address]. Bitcoin Atlantis, Madeira, Portugal.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas, NV.

Saylor, M. (2025, May 6). *Bitcoin for corporations* [Keynote address]. Strategy World 2025: Bitcoin for Corporations, Orlando, FL.

Saylor, M. (2025, June 21). *The power of 21* [Keynote address]. BTC Prague 2025, Prague, CZ.

Ch. 26

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Pompliano, A. (Host). (2020, September 16). *Michael Saylor on buying Bitcoin with his balance sheet* (No. 385) [Audio podcast episode]. In *The Pomp Podcast.*

Ch. 27

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Ch. 28

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Mekhail, G. (Host). (2025, May 28). *Michael Saylor: Why Bitcoin Q&A* [Session]. Bitcoin 2025, Las Vegas, NV.

Odell, M. (Host). (2024, July 26). *Saylor X Odell fireside* [Fireside chat]. Citadel Dispatch, Bitcoin Park, Nashville, TN.

Saylor, M. (2024, July 26). *The Bitcoin revolution: Rebuilding the global economy with digital capital* [Keynote address]. The Bitcoin Conference, Nashville, TN.

Saylor, M. (2025, June 21). *The power of 21* [Keynote address]. BTC Prague 2025, Prague, CZ.

Microstrategy (2024, October 30), Q3 2024 Earnings Call

Strategy (2025, July 7). *MicroStrategy $4.2B STRD ATM investor presentation* [Investor presentation].

Ch. 29

Jilch, N. (Host). (2024, June 19). *The lifeblood of civilizations* [Fireside chat]. BTC Prague 2024, Prague, CZ.

Ch. 30

Brunell, N. (Host). (2024, November 18). *Michael Saylor on Bitcoin, the red wave, the future of crypto and building wealth* [Audio podcast episode]. In *Coin Stories.*

Saylor, M. (2024, September 11). *The digital gold rush* [Keynote address]. H.C. Wainwright Annual Global Investment Conference, New York City, NY.

Ch. 31

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Saylor, M. (2024, June 14). *21 rules of Bitcoin* [Keynote address]. BTC Prague, Prague, CZ.

Ch. 32

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Odell, M. (Host). (2024, July 26). *Saylor x Odell fireside* [Fireside chat]. Citadel Dispatch, Bitcoin Park, Nashville, TN.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas, NV.

Ch. 33

Chhugani, G. (Host). (2024, October 9). *Michael Saylor on MicroStrategy's Bitcoin journey* [Fireside chat]. Bernstein Advisors.

Henderson, A. (Host). (2021, May 15). *Why Michael Saylor says Bitcoin is the best asset class now* [Audio podcast episode]. In *Nomad Capitalist.*

McCormack, P. (Host). (2021, November 29). *Bitcoin is digital energy with Michael Saylor* (No. 431) [Audio podcast episode]. In *What Bitcoin Did.*

Miller, B., IV (Host). (2024, July 26). *Fireside chat with Michael Saylor* [Fireside chat]. Bitcoin 2024, Nashville, TN.

Odell, M. (Host). (2024, July 26). *Saylor X Odell fireside* [Fireside chat]. Citadel Dispatch, Bitcoin Park, Nashville, TN.

Saylor, M. (2024, May 2). *There is no second best* [Keynote address]. MicroStrategy World 2024: Bitcoin for Corporations, Las Vegas, NV.

Saylor, M. (2025, June 21). *The power of 21* [Keynote address]. BTC Prague 2025, Prague, CZ.

Bonus

McCormack, P. (Host). (2023, May 17). *10 rules for life with Michael Saylor* (No. 659) [Audio podcast episode]. In *What Bitcoin Did.*

Acknowledgments

People who reviewed early drafts and/or offered encouragement: Preston Pysh, Will Cole, Max Keiser, Ricardo Salinas Pliego, Seb Bunney, and Chris Kuiper

Interviewers, event producers, and content creators for providing permission to include their work: Robert Breedlove, Natalie Brunell, Tom Ryan and Morgan Brennan at ICR, Matayas Kuchar, Gautam Chhugani at Bernstein, Stephan Livera, Peter McCormack, Niko Jilch, Anthony Pompliano, Nik Bhatia, Peter Diamandis, Robles Angelo, Anthony Scaramucci, Matt Odell, Rod Roudi at Bitcoin Park, H.C. Wainwright & Co., Stephen Chow, and LaDoger.

Folks at Strategy for being receptive to the project: Bonnie Roberts, Shirish Jajodia, and Chaitanya Jain.

Sam Callahan for editing the manuscript and the team at Konsensus Network for producing the final product.

Michael Saylor for educating millions and granting permission to create this resource.

My wife and daughters for giving me the world.

And the person who first introduced me to Bitcoin (you know who you are).