

# Gini: Blockchain with a Soul

## Whitepaper with a Soul

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# Gini: Blockchain with a Soul

## Preface

Gini is different from all other cryptocurrency projects on Earth today in nearly every conceivable way. We have already published a tremendous amount on the [Gini website](#) and in the [Gini book](#); however, we understand that many people don't have the time or desire to read books these days. So, this whitepaper succinctly summarizes the most important concepts with links to the website for context.

For people who have experience reading other cryptocurrency whitepapers, please keep the following in mind: Most whitepapers are written by [very young](#) crypto project founders based on the writing style they learned from their professors in school. Their style is often very academic and focused almost entirely on the technology with little or no real-world socioeconomic, geopolitical or historical context. The Gini technology is unique and exciting for tech geeks like us, but tech geeks represent a tiny fraction of the human population; and Gini is about much more than technology. So, we have consciously chosen to use a relatively informal style that can be appreciated by a broader audience.

The fundamental problems that plague existing fiat and cryptocurrency systems on Earth today are not technological; they are philosophical and socioeconomic problems. Technology is a relatively small part of what is preventing humanity from achieving its full economic and humanitarian potential. This is why we take a much broader set of *real-world* factors into account during the R&D for Gini's technologies. It's also why we sequence the sections of this whitepaper in order of significance, relative to their influence on the economic and governance systems that have the greatest impact on humanity today.

Finally, as we did with the Gini [documentary film](#), we've packed a lot of information into this succinct whitepaper, which contains dozens of links to external sources to substantiate every fact herein. However, we recommend reading this entire document once first without clicking any of the links to develop a broad understanding of the true purpose of Gini. Then, you can go back and click the links to view resources that you want to explore more deeply.

With that in mind, thank you for joining us on this exciting journey. Now let's get started. . . .



## Introduction

The [Gini team](#) invented secure and scalable ecommerce in 1996 when we invented [Authorize.Net](#), the world's first and largest secure and scalable Internet payment processing gateway. To date, Authorize.Net has processed over \$1 trillion. Then we launched [AngelPay](#), the world's first and largest nonprofit merchant payment processor, which serves thousands of merchants worldwide. Our team's proven, real-world technical experience in payment processing, cryptological systems, artificial intelligence, and global commerce is an asset to the communities we serve. So, we have deep knowledge, skills, and appreciation for the power of technology in the modern world. However . . .

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**Technology Alone is Not Enough.** This is why the Gini team has also spent many years analyzing the fundamental structure and real-world outcomes of many socioeconomic and geopolitical institutions, systems and events. We've written nonpartisan books and dozens of articles for our [Gini School of Economics](#) to share our research and observations about how wealth, power, economic, political and technological systems have evolved (or devolved) on Earth . . . and how they have become an inequitable and unsustainable noose that is rapidly squeezing the life out of capitalism and democracy on Earth today.

**Most Cryptocurrencies Today Don't Solve any Meaningful Real-World Problems.** Cryptocurrency teams often build technology for its own sake without making their tools and systems useful in real-world commerce. Or, they simply lack the skills, experience or authoritative access to the backend banking and ecommerce infrastructure that's necessary to integrate their tools and systems with the credit card and banking systems that already exist. So, they have to build their tools and systems in ways that force their users to learn arcane protocols and user interfaces that are unfamiliar, risky, tedious and frustrating.

**Gini is Different.** We are building the open source Gini technology directly into our existing nonprofit credit card processing and banking systems to create a completely seamless user experience. Gini stakeholders will be able to use their Gini cryptocurrency with Gini debit and credit cards at millions of merchants worldwide—wherever Visa and Mastercard are accepted. These are not merely *pre-loaded gift cards*; these are *actual debit and credit cards* linked directly to their Gini bank and credit accounts.

**Using Gini is Already Familiar to Billions of Humans.** Gini currency will appear in Gini stakeholders' bank accounts *as an actual currency account*, just like their existing USD, EUR, JPY, CHF . . . accounts. From a Gini user's perspective, all currencies (fiat and crypto) work the same way. This is a dramatic contrast to how other cryptocurrencies work today; and it's why we rationally believe Gini will be adopted by a much larger population over time.

**Gini Approaches R&D with a Holistic Perspective.** We have proven experience building secure and scalable financial service systems, but we also understand that technology is only as good as the *real-world* incentives and governance systems that define and nurture our technical development for the benefit of humanity. Gini really is different in nearly every conceivable way. We thank you for giving us the opportunity to share our passion and nonprofit mission with you at this critical moment in human history.

## Violent Revolutions

Violent revolutions are like volcanoes: The raw material that causes a sudden explosion of death and destruction is the predictable consequence of boiling elements beneath the surface. In 1788, King Louis XVI and his Ancien Régime enjoyed all the trappings of elite wealth and power. From within the velvet walls of the Palace of Versailles, the French royal family, nobility and clergy all believed their wealth and power were ordained by God. They believed the mere existence of their centuries-old regime *was proof* that the established order was the best system of economic and political governance ever conceived.

Within a few months, everything changed. By July of 1789, King Louis' kingdom was transformed into a frenzy of death and destruction. Tens of thousands of French elites were viciously murdered, sentenced to the guillotine without legal due process, their wealth was confiscated, and they were all violently removed

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from power. Throughout the entire process, all the way up to the moment of his death under the guillotine, King Louis was willfully blind to the reality of the real world: **Violent revolution is inevitable when economic and political conditions become intolerable to the masses.**

The same rapid disintegration of institutional order and violent confiscation of elite wealth and power has occurred many times in human history. Three times in a single human lifetime Russia was transformed *virtually overnight* from an economically oppressive czarist regime, to an economically oppressive communist regime, to an economically oppressive kleptocracy. Similar patterns of violence and tyranny have occurred in China, Chile, Germany, Argentina, Guatemala, Cuba, Korea, Italy, Iran, South Africa and many other countries . . . *in the past 90 years alone.*

**All Violent Revolutions Have a Common Theme.** They occur because the economic pain and poverty of large human populations is substantially ignored by a ruling elite. This happens whenever a political system structurally concentrates economic and political power into a relatively tiny number of hands. Just like King Louis and the elites of 18<sup>th</sup>-Century France, the fiat *and* crypto elites in the U.S. and many other countries today are willfully blind to what is happening in the real-world outside the velvet walls of their unrealistic and self-serving economic theories and models.

**In the United States and many other countries today, the raw material of violent revolution is boiling . . .** and the temperature is rapidly rising. Our Gini team has accurately predicted the most significant socioeconomic events in recent years in the books and articles that we have published because we see clearly what is happening. But *anybody* who understands economic history and the predictable cycle of violent revolutions can see what is coming.

**This is not about conspiracy theories,** nor is this an attack on any particular special interest group, but let's be clear: The executives and largest shareholders of the [banking cartel](#), [gigantic transnational corporate cannibals](#) ([more](#) and [more proof](#)), and self-serving political class in many countries today are approximately 0.000001% of humanity, but they have created an economic and political system that is inequitable and unsustainable for the other 7.5 billion humans on Earth. **By definition, anything that is unsustainable cannot last; thus, the status quo cannot and will not last.**

## Economic Systems

When systems collapse, they must be replaced by something. However, economic system collapses create so much violence and pain that sociopathic dictators like Joseph Stalin, Adolph Hitler, and Mao Zedong *inevitably* emerge because only a sociopath can kill millions of humans to suppress the violence and chaos that ensues after an economic collapse. From a technical governance perspective, the problem with sociopathic dictators is that they are usually economic idiots, but the political power they obtain through violence gives them the delusion that they know how to solve their country's economic problems. So, they kill millions of humans because that's the only way to cram their unsustainable and idiotic economic experiments down the collective throat of their citizens.

**Socioeconomic Operating Systems for Humanity.** All economic systems exist along the same socioeconomic continuum. We know this is true because *highly centralized* governments, central banks,

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gigantic corporations [and cryptocurrencies](#) dominate global capitalism today; yet, there are substantial *market-based* structures in the communist regimes of China, Vietnam and the waning years of the Soviet Union. Of course, there is a clear *theoretical* difference between capitalism and communism, but anybody who claims there is a clear *real-world* distinction between “free-market capitalism” and “authoritarian communism” is mistaken. Socioeconomic systems manifest *in the real world* along a continuum and they can be *configured* to produce optimal outcomes just like a computer operating system.

**Optimizing for Broad-Based Wealth & Sustainability.** Nothing in macroeconomics happens by accident. Every fiat and crypto monetary system (including Gini’s) is driven by an agenda. The agenda either optimizes for *broad-based* wealth and power or it optimizes for wealth and power concentrated in the hands of a tiny group of ruling elites. In a *democratic* society, politicians and cryptocurrency project teams *should be configuring their capitalism* according to their stakeholders’ unique cultural and philosophical values and priorities, which would optimize their socioeconomic operating systems to maximize the wealth and quality of life for the largest number of humans. Unfortunately, that is not the intention of politicians, their corporate donors, and other cryptocurrency projects in many countries today, which is why [broken capitalism](#) exists.

**Capitalism Comes in Different Flavors.** Some people believe capitalism is fundamentally unsustainable, but as discussed in [Is Capitalism Sustainable?](#), the sustainability of capitalism is not a binary, yes/no question. In fact, there are at least five distinct *flavors* of capitalism: agrarian capitalism, industrial capitalism, financial capitalism, bank capitalism, and Gini Capitalism. Capital, value, wealth, political power and quality of life flow throughout a society according to how politicians *configure* their country’s socioeconomic operating system. Thus, “capitalism” is not a monolithic system that we can logically say is *good* or *bad*.

**What is the “Capital” in Capitalism?** Capitalism is how stored value and wealth (“capital”) is organized and deployed to capital-intensive projects that produce value, income, wealth and human happiness within an economy. A society *can choose* how it wants to *configure* the value creation and distribution process within their economy. Thus, *capitalism can and should be configured based on the prevailing values and priorities that are important to a broad majority of humans in each society*, not based on the narrow interests of a tiny number of elites, crypto whales or shareholders of gigantic corporations. This is the only way to ensure broad-based peace and happiness, which is the only way to avoid violent revolutions that destroy capital, wealth, happiness, communities, cultures, and entire countries.

**Capitalism Mutates as an Economy Grows.** As an economy grows and becomes more diversified, it graduates from agrarian capitalism to industrial capitalism. As a country’s industries produce more capital-intensive products, it graduates to financial capitalism, which is necessary to aggregate financial capital to build larger factories and infrastructure projects. Unfortunately, financial capitalism is relatively easy to centralize and control by manipulating and controlling the financial and industrial regulations that are produced by a country’s political system. In the fiat world, this is why gigantic banks and their largest shareholders *inevitably* hijack governments and exploit them for their own private interests. When this happens, the economy has mutated into *bank capitalism*.

**Bank Capitalism Destroys Capitalism.** Bank capitalism enables banks to insert themselves like a deadly virus into the middle of all economic activity throughout every economy on Earth today. (Even the [Bank for International Settlements admits this](#).) Then, like a giant vampire-squid, gigantic banks are able to suck

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value out of the global economy and [instigate wars](#) that amplify their profits, wealth and power. This is how the global economy has mutated into the most self-destructive type of capitalism on Earth today: bank capitalism. (If you're not sure about this, see all the economic and bank-related books in the [Gini book list](#).)

**Trickle-Down Economics Does Not Work.** Politicians and crypto teams can configure their socioeconomic operating systems to maximize broad-based wealth and power *OR* maximize corporate/crypto whale profit, but they cannot maximize both because maximizing corporate/crypto whale profit is mutually exclusive to maximizing broad-based wealth and power. Additionally, we know trickle-down economics does not work for [many reasons](#), which is why a society must choose between maximizing broad-based wealth/power *or* maximizing corporate/crypto whale profit. The choice we make determines our flavor of capitalism and how capital, value, wealth, political power, happiness and quality of life are distributed throughout a population. This truth is the basis of our name—"Gini"—which is based on the [Gini Index](#), the gold standard in Economics for measuring the distribution of wealth within every country.

**Capitalism vs. Communism Propaganda.** The fundamental humanitarian problems that the Gini Platform is designed to resolve have nothing to do with the philosophically shallow noise and propaganda associated with the *communism vs. capitalism* debate. Although many people believe in various forms of socialism, very few humans on Earth today actually believe economic communism works because the destructive outcomes of economic communism are easy to see for any human with a brain.

Regardless, Gini is a nonpartisan organization and communism has nothing to do with the Gini philosophy and technology. Anybody who falsely accuses us of any *-ism* obviously does not understand this basic reality: Violent revolutions are the *predictable and inevitable consequence* when wealth and political power are concentrated in the hands of a relatively tiny group of elites, which creates a socioeconomic volcano that inevitably explodes into widespread death and destruction.

## Gini Capitalism

Human civilization is propelled by incentives; and all human ecosystems are shaped by *incentive structures*, which are combinations of interdependent incentives embedded within every human environment. This is true in socioeconomic systems like capitalism and democracy and it's true for all human governance systems, including the political institutions of governments, profit-driven boardrooms of banks and corporations, cryptocurrency projects, and nonprofit humanitarian organizations. The Gini team has spent years analyzing and developing systems that have rational, equitable and sustainable incentive structures so that the Gini ecosystem is as equitable and sustainable as humanly possible.

**Does Gini Have the Right Incentives?** For all the reasons discussed in [Who Has the Right Cryptocurrency Incentives?](#), the Gini Foundation is structured as a tier-1 nonprofit NGO to ensure that Gini always has sufficient financial and political independence to avoid being captured by politicians and special interest groups. Based on the analysis in that article, it's difficult to find any other organization like Gini that has properly aligned incentives *and* the technical skills, knowledge and *proven* real-world experience to build a privacy-assured cryptocurrency that protects human rights, provides an equitable and sustainable monetary system, and maximizes the broad-based, wealth-generating potential of real-world commerce.

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After recognizing all the real-world realities that we have discussed so far, the next logical questions are: What does a sustainable economic system look like? What alternative exists that can compete with the toxic and unsustainable status quo? Let's focus on that now.

**Gini Capitalism is an Easy Way to Gradually Opt-Out of the Toxic Status Quo.** As discussed on the [Ecosystem Stability Mechanism page](#), the Gini Index enables us to measure the concentration of wealth in the Gini ecosystem, but we also do something much more useful with it: Enforce money supply best practices by ensuring that the ecosystem's Gini Index never exceeds 25% for too long. This has many profoundly positive consequences for an economy because it automatically prevents [broken capitalism](#) and [corporate cannibals](#) from rampaging all over the ecosystem and destroying the [Capital-Labor Duality](#) at the heart of *every type of capitalism*. These ecosystem stability mechanisms are the essence of a socioeconomic operating system for humanity that we call "Gini Capitalism," which is far more equitable, democratic, and sustainable than bank capitalism. Gini Capitalism is also an easy and fun way for Gini stakeholders to gradually opt-out of the toxic status quo.

**How Does Gini Capitalism Work?** In contrast to self-destructive bank capitalism, Gini Capitalism uses technology for humanitarian purposes. Specifically, the Gini technology anonymously quantifies the value creation process wherever and whenever value is created within the Gini ecosystem. This enables the [Value Streams System](#) to reward stakeholders according to their contributions to the ecosystem. This ensures that unearned power based on race, social class, political connections, and other non-value-creating factors in the broken fiat system do not skew the distribution of wealth and power in the Gini ecosystem.

**Gini Capitalism is Inherently Stable.** Gini's Ecosystem Stability Mechanism ensures that no single entity can ever become a systemic risk to the ecosystem. Then, the [Community Governance System](#) ensures that all decision-making processes that significantly impact the ecosystem are based on the most egalitarian and democratic voting process humanly possible. This ensures that no cartel can become a systemic risk to the ecosystem. Together, these mechanisms ensure that Gini Capitalism will always be the most equitable, stable, democratic and sustainable socioeconomic operating system humanly possible.

**Gini Capitalism Can Save Humanity from Bank Capitalism.** Gini Capitalism is a viable and credible alternative model for how a socioeconomic operating system for humanity can work. Of course, we don't expect Gini Capitalism to replace the toxic status quo overnight. We don't expect gigantic banks and corporations to gleefully embrace any of Gini's principles, which is why we're launching the nonprofit [Gini Credit Union](#) so that Gini stakeholders don't need to depend on cannibalistic banks ever again.

**Nothing Will Change if We Don't Take Responsibility for Our Own Destiny.** Gini Capitalism (or any meaningful reform) must grow from the grassroots in every community. Nothing will ever change if we wait for self-serving politicians and gigantic corporate cannibals to give us solutions because their incentive structures prevent them from ever fixing anything. We, the people, must take responsibility for our own destiny; and Gini Capitalism is a viable path forward.

**"But Gini Capitalism Doesn't Include XYZ. . ."** We have many new features and ideas to share and explore with the Gini Community over time. Please remember: This is just the beginning; so, the [Value Streams System](#) and other Gini Platform features will likely expand to include and reward other forms of value creation over time. The Gini technology is inherently designed at every level to amplify and reward the human value creation process and eliminate the toxic elements that prevent humanity from achieving its

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full economic and humanitarian potential today. This is the best foundation possible, but we, as a human community, will grow and improve upon this foundation over time.

## Time is Running Out

Over the past year, total cryptocurrency market cap has averaged about \$500 billion. This might seem like a lot, but it's tiny compared to the approximate \$250 trillion total global money supply, and over \$1 quadrillion in total derivatives transactions. The difference between total cryptocurrency market cap and total currency plus derivatives worldwide represents the approximate total potential market cap for cryptocurrency growth. Of course, cryptocurrencies must compete with national fiat currencies, but when fiat currencies collapse, [as they always do](#), something must replace them. That's why we have designed the Gini cryptocurrency to be a viable alternative when (not if) fiat currencies collapse. Additionally . . .

### **When Bank Capitalism Inevitably Collapses ([for these reasons](#) and [here](#) and [here](#)), What Will Replace It?**

If we, as a human community, don't start working to replace it with something now, it will be too late after the collapse because tyrannical dictators will rise again and murder anybody who resists their idiotic economic experiments. That's not fear-mongering; it's the *predictable outcome* of the chaos and violence that occur after a major economic collapse. (NB: The 2008 financial crisis *was not* a collapse; it was just a crisis. The Great Depression was a collapse, which led to [over 70 million human deaths](#).) If we don't act now, then we can expect somebody else with far less altruistic intentions will act later; and humanity will suffer a far worse fate under the iron grip of the next Stalin, Hitler or Mao.

**We Can Prevent a Violent Systemic Collapse.** Rising economic and geopolitical tensions today are already creating the conditions for global war, which are [fundamentally caused by the unsustainable bank capitalism](#) that is choking the life out of humanity today. Gini's purpose is to prevent a violent systemic collapse by creating an alternative path forward. This path is a way for humanity to gradually opt-out of the toxic status quo. The path is powered by unique, community-driven open source technologies that are explicitly engineered to protect human rights, provide an equitable and sustainable monetary system, and maximize the broad-based, wealth-generating potential of real-world commerce.

## The Gini Monetary System

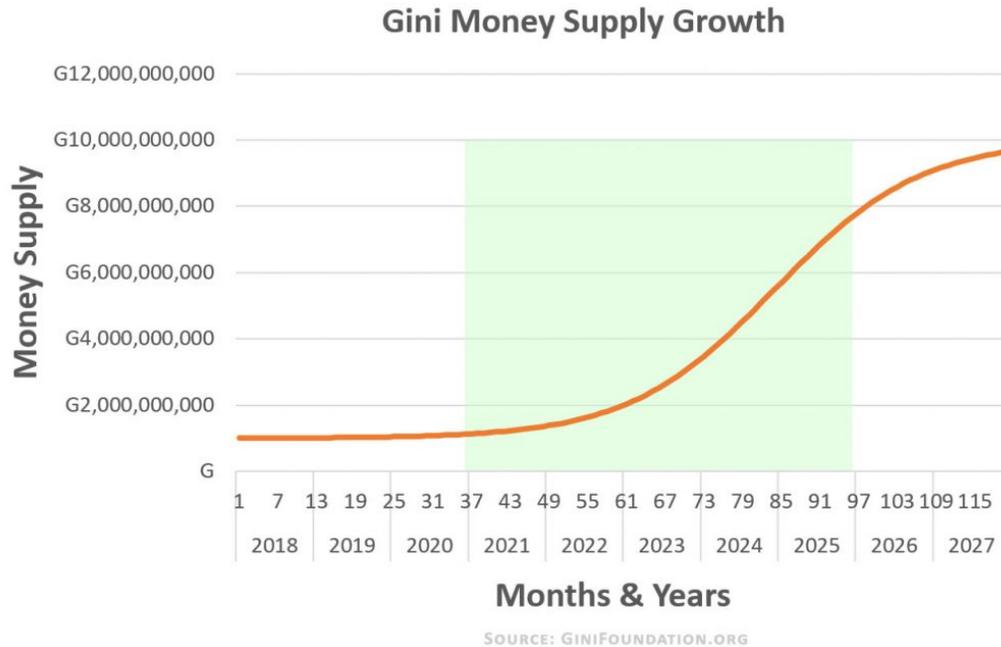
Nothing else matters if a fiat or cryptocurrency economy has a broken monetary system. Broken monetary systems destroy currencies (see the [Currency Graveyard](#)) and prevent existing cryptocurrencies from being widely adopted in real-world commerce. In contrast, Gini has been designed with the most sustainable and equitable monetary system possible, which makes it more viable for real-world commerce. Below are a few highlights, but you can learn much more about the principles and processes associated with Gini's monetary system in the [Monetary Policy category](#) of the Gini Knowledge Base.

## Gini Cryptocurrency Supply

Every economy's money supply must start at some amount and increase to another amount over time to accommodate real economic growth, but how much money is the *correct amount*? The answer to that

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question depends on many factors and each economy has different socioeconomic characteristics throughout its lifespan that require different amounts of money at different points in time to function effectively. For Gini, the optimal starting money supply is 1 billion Gini units and the optimal maximum money supply is 10 billion Gini units. Gini’s initial money supply and sustainable growth rate can be visualized in the following chart.



**Why 10 Billion Max?** The maximum money supply of cryptocurrency projects today is all over the map—ranging from about 11,000, to Bitcoin’s 21 million, up to 1 trillion units in some obscure cryptocurrency projects. Whenever we have asked project teams, “Why did you choose x units for your max money supply?” their answers typically amounted to, “It just seemed like a good number to use.” That doesn’t mean they don’t have some kind of logic behind their choices, but in general, their logic isn’t rooted in a deep understanding of historical money supplies and monetary systems in the real world. In contrast, we examined the money supply issue from several different perspectives to develop a technically sound, logically consistent, and sustainable Gini monetary system based on the following principles.

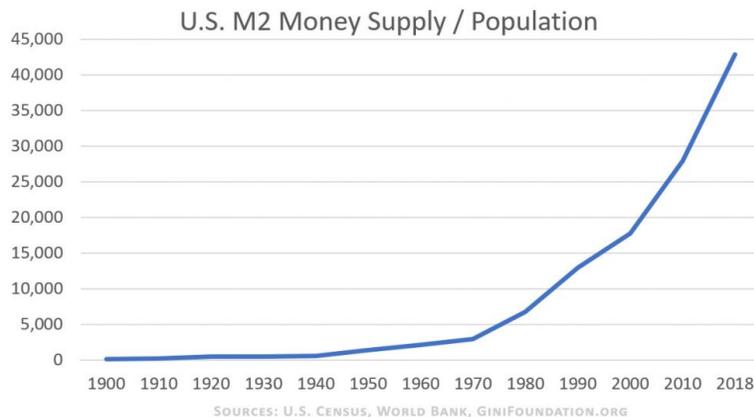
**10 Billion is the Magic Number.** During our research and analysis, we made several interesting observations. In particular:

- **Approximate Total Ounces of Gold on Earth: 10 Billion<sup>1</sup>.** Pegging the Gini money supply to Earth’s gold supply creates a finite and useful upper limit, which is consistent with thousands of years of sound, precious metals-based money supply management throughout human history.<sup>2</sup> This is also one of the reasons that Gini is working with several hundred mining companies and community cooperatives throughout the developing world to help them securely and efficiently manage their precious metals supply chains on the Gini Platform.
- **Approximate Maximum Human Population on Earth: 10 Billion.<sup>3</sup>** Earth’s finite natural resources create an upper limit on human population growth, which is one of the most significant factors that

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impacts money supply growth for an economy. If a human population grows without corresponding growth in the money supply, it creates deflation. Both inflation and deflation create undesirable consequences, which is why Gini's monetary system is based on a steady-state money supply that gradually grows in proportion to the population.<sup>1</sup> This ensures that there is no debasement of the Gini currency, which is consistent with the [Law of Money-Value Creation](#).

- **Approximate USD Money Supply in 1900: 10 Billion.** We spent a significant amount of time analyzing how the U.S. money supply was impacted by various events between 1900 and 2018, including the 1913 creation of the Federal Reserve, WWI in 1914–1918, WWII in 1939–1945, advent of the Bretton Woods System in 1944, Marshall Plan in 1948, Korean War in 1950–1953, Vietnam War in 1955–1973, termination of the Gold Exchange Standard in 1971, Saudi/OPEC agreement to price all their oil in USD in 1974, Iraq/Afghanistan War in 2003–present, and quantitative easing (QE1/QE2/QE3) associated with the 2008 Financial Crisis. Based on this analysis, we observed that the money supply in the year 1900 was the most *pristine* state of the U.S. monetary system. Specifically, that was the last point in time before the USG began its endless, [inflationary wars](#) and [monetary policy manipulation](#). The following chart reveals the relationship between U.S. money supply growth and population growth.



**The Gini Money Supply is Designed to Preserve Gini Value.** One of the most important observations from our analysis is that a money supply must be designed to grow at a rate equal to or slower than population growth to prevent currency debasement. For this reason, the Gini money supply is designed to grow slightly slower than Gini stakeholder population growth. This ensures that the demand for Gini will be strong relative to the supply. Thus, the gradual increase in the Gini money supply to accommodate real-world commerce over the initial 10-year ecosystem-building period has a *dis-inflationary* effect. This prevents the value of Gini from being eroded by the gradual money supply growth required to grow the Gini ecosystem.

**Gini Currency Units Are Divisible to Accommodate All Future Needs.** Just like 1 USD is divisible into 10 dimes or 20 nickels or 100 pennies without diminishing their total purchasing power, the Gini cryptocurrency is divisible into smaller units, too. As the Gini ecosystem expands, 10 billion base Gini units can be divided into  $10^{28}$  Gini units if necessary without diminishing the purchasing power of the total Gini money supply. (NB: Gini units are represented within the Gini source code as 128-bit integers.) This will be

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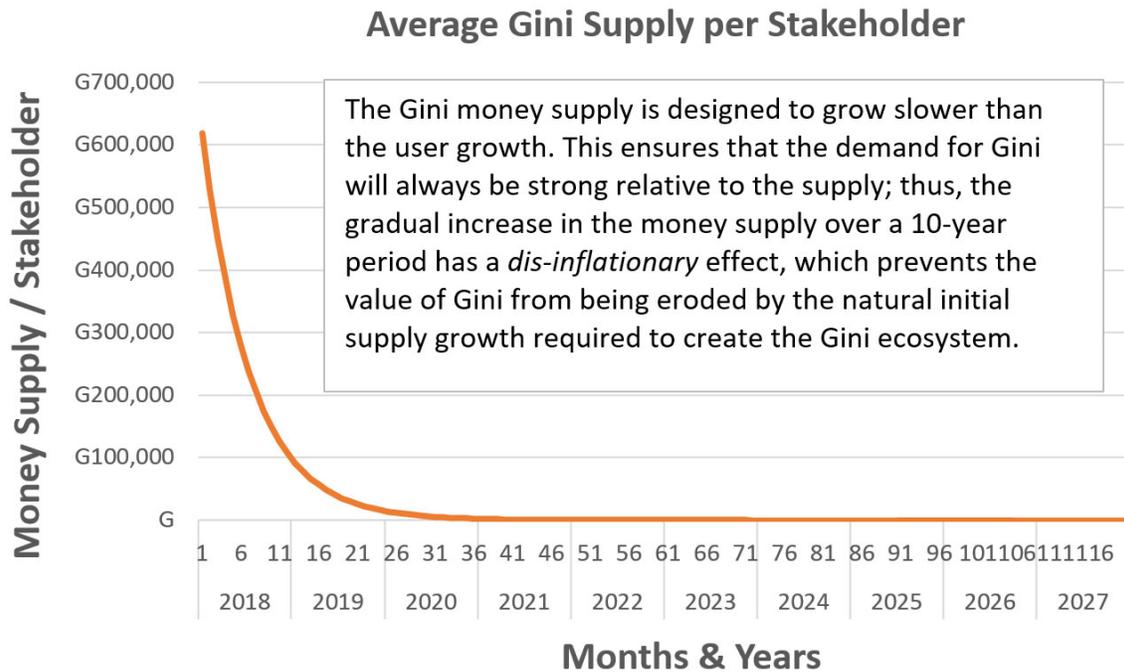
<sup>1</sup> Technically, it's slightly below steady-state, as discussed later.

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increasingly necessary as the Internet of Things (IoT) and billions of autonomous distributed apps start producing trillions of micro-transactions every year.

**Why Is Gini *Dis-Inflationary*?** The population of stakeholders within the Gini ecosystem will grow over time. As the population grows, the Gini money supply automatically and naturally grows *based on earned Gini* that is automatically injected into the ecosystem by the [Value Streams System](#). This process ensures that the currency injections never violate the [Law of Money-Value Creation](#). So, Gini's money supply growth is designed to be *dis-inflationary* (not deflationary) for three reasons:

1. It ensures that the value of Gini currency is *never debased by monetary inflation*.
2. It enables Gini to appreciate in value without discouraging real-world commerce.
3. As every network of human users grows, there is a statistical reduction in network utilization per user *on average*. When that principle is applied to the Gini Network, it means there will be a statistical reduction in the total amount of Gini owned *on average* (per-capita) as the population grows. This is true for all networks because every network spawns *power users, newbies*, and every level of skill and participation in between, which is what creates the statistical dispersion of network/cryptocurrency utilization over time. The chart below illustrates this phenomenon for the Gini Network.



SOURCE: GINIFOUNDATION.ORG

**Statistical Money Supply Dispersion is Not the Same as Broad Wealth Distribution.** Just because all networks tend to experience a reduction in *per-capita* resource utilization does not mean all cryptocurrency economies automatically produce a broad distribution of wealth. Many cryptocurrency project teams confuse statistical dispersion with actual wealth distribution. (As can be seen in [this debate](#).) This is the same as confusing the concepts of per-capita wealth and median wealth. They are entirely different

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concepts. For example, if Bill Gates and two homeless people (each with only \$1 in net worth) are in the same room, their *per-capita* (average) wealth would be about \$31 billion in 2018! In contrast, their *median wealth* would be only \$1.<sup>4</sup> This is why all the other cryptocurrency projects that claim trickle-down economics will fix their wealth concentration problems over time are being disingenuous or naive.

This is just an overview of all the research, analysis, and principles that have been taken into account as we have developed Gini's equitable and sustainable monetary policy and systems. The [Gini book](#) and the [Monetary Policy category](#) of the Gini Knowledge Base provide a much deeper *real-world* understanding of all these concepts.

## Privacy Is a Human Right

**Meaningful Democracy and Sustainable Capitalism Cannot Exist without Meaningful Transaction Privacy.** Bitcoin and nearly all other cryptocurrencies today generally provide transaction *anonymity*, but *they don't provide true transaction privacy*. This is a huge problem because it enables short-sighted politicians and the agencies they control (e.g., the NSA, FBI, OFAC, IRS, FinCen . . . and their counterparts in other countries) to map entire cryptocurrency networks and compile cryptocurrency blacklists, which [they're already doing today](#). These techniques enable them to correlate anonymous transactions and trace them back to you without a search warrant. This is already happening today, but it's becoming easier every day as more powerful A.I. is increasingly used by politicians, in collusion with gigantic banks and corporations, to manipulate the general public in many ways.

**Peaceful Protest & Resistance Depends on Transaction Privacy.** Cryptocurrency network mapping and blacklists are a disaster for democracy and capitalism because it's impossible to purchase the goods and services that are necessary to effectively resist or protest any oppressive government if corrupt and/or self-serving politicians can see all your private transactions *in real-time*. If you pose any kind of threat to their political power *or* the market power of the gigantic corporations that fund their political elections, by the time your purchase is complete, you can reasonably assume that [government thugs are already on their way](#) to your house to prevent you from exercising your constitutional rights. Thus, the architectures of Bitcoin and nearly all other cryptocurrencies today are a dream-come-true for tyrants, dictators, fascists and [gigantic corporate cannibals](#).

In contrast, **Gini is designed to provide transaction anonymity *and* privacy by default** without significantly impacting transaction speed. Privacy is a deep topic on many levels, which we explore more deeply in the [Gini book](#). We have also written many articles about Gini's privacy features, which can be viewed in the [Privacy Category](#) of the Gini Knowledge Base.

**Multi-Trillion-Dollar Scams & Humanitarian Tragedies.** If you don't read the Gini book, please at least understand this: The deeply flawed logic that many self-serving politicians, gigantic banks and corporations use to destroy our human right to privacy are sophisticated scams and *systemically* (not always consciously) designed to concentrate more wealth and power into their own hands. Specifically, the "war on terror" scam and income tax evasion are often presented as reasons to ban the use of cryptocurrencies, but these arguments are deeply flawed on many levels. Even worse, these liberty-killing policies have already led to grotesque abuses of government and corporate power, millions of human deaths, many millions of human

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refugees, more than \$6 trillion in wasted American wealth, an exploding national debt that is killing the U.S. economy and middle class, and many other humanitarian tragedies. *None of these scams and tragedies are necessary to create a safe country and a fiscally sustainable government*, which we prove in the [Gini book](#).

**Artificial Intelligence Increases the Urgency.** As summarized in the [Gini School of Economics Introduction](#), the convergence between self-serving politicians, gigantic corporations and artificial intelligence is already here and it's rapidly increasing their collective power over humanity. This convergence will enable them to map and destroy nearly all existing cryptocurrencies, which will enable them to block any meaningful resistance to their incompetent and/or corrupt socioeconomic policies. On humanity's current path, these tragic outcomes *are predictable and inevitable* because the incentive structures in many governments and corporations on Earth today are hostile to any meaningful competition to the status quo. When the A.I.-corporate-political convergence is complete, that's game over for humanity because their malicious A.I. will be too fast and too powerful for any human population to resist. This is not fear-mongering; *this is reality*.

**Gini is Not Just a Cryptocurrency.** Gini Capitalism is important, but it is merely the means to achieve a more fundamental goal: Protect the human right to self-sovereignty, democratic self-government, and the right to life, liberty and the pursuit of happiness that the U.S. Founders gifted to humanity. *We, all humans on Earth*, are losing those precious gifts every moment that we allow self-serving politicians and gigantic corporations to destroy our human right to transaction privacy. Without transaction privacy, there is no democracy. Without democracy, there is no sustainable capitalism. Indeed, sustainable democracy and sustainable Gini Capitalism are two sides of the same Gini cryptocurrency coin.

## The Gini Technology

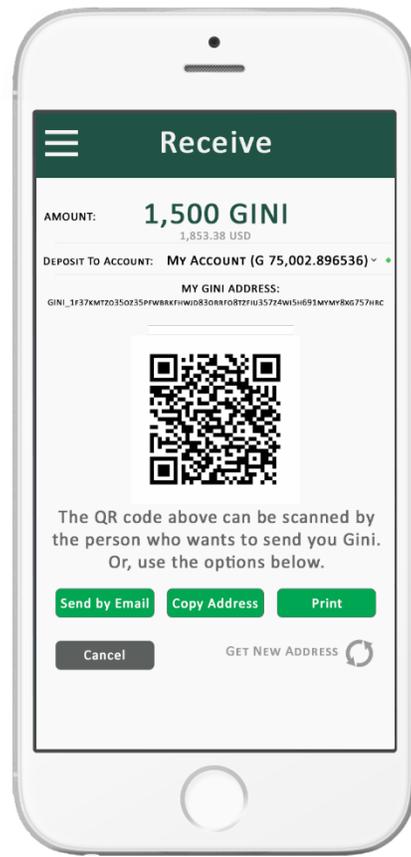
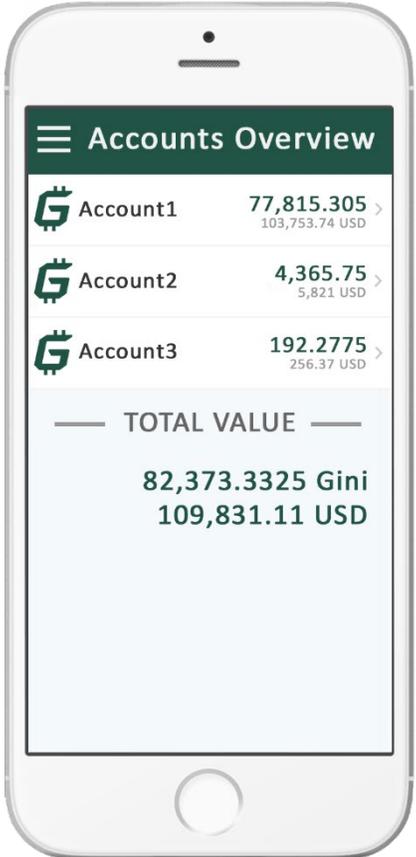
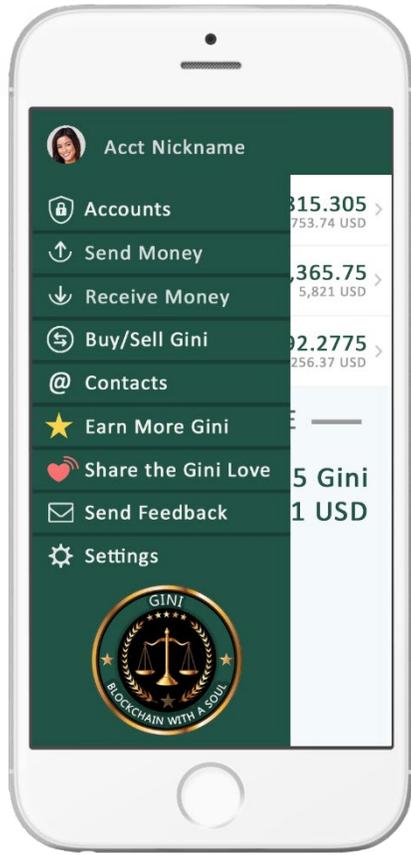
We have already written many articles about the Gini technology and we will write many more over time. Here we present a succinct summary of the most significant technological components of the Gini Platform, which are linked to more in-depth articles throughout this section for those who want to learn more.

### Simple User Experience

Virtually all of Gini's systems and features are fully automated; so, if you're the type of person that is overwhelmed by technical details, don't worry. Gini is designed to be the most user-friendly cryptocurrency and you will be able to use it just fine without understanding any of the technical details in this technology section. We will start this section with some simple concepts and then gradually transition to some harder stuff. Even if you're not usually interested in technical details, it's still possible to appreciate the important socioeconomic reasons why we have made many technical decisions by reading this section. So, please try—you can do it!

**Less than 1% of the Global Human Population Has Any Substantial Experience with Cryptocurrencies.** The primary reason for this is nobody has made it easy to use cryptocurrencies in real-world commerce. The user interfaces of existing cryptocurrencies are usually complicated for non-tech geeks. In contrast, we have invested a significant amount of time and resources designing Gini user interfaces that are simple, intuitive and integrated into the credit card and banking interfaces that they already know how to use. The snapshots below illustrate the Gini graphical user interfaces (GUIs) for the mobile and desktop software.

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# Gini: Blockchain with a Soul

A snapshot of the Gini Decentralized Exchange software is displayed below. We have made the peer-to-peer exchange experience as simple as possible. Anybody who has ever used eBay will understand how to buy/sell Gini cryptocurrency and other commodities and assets in the future on the Decentralized Exchange.

Gini: Blockchain with a Soul
— □ ×

BUY
SELL
HISTORY
ACCOUNT

AMOUNT (EUR)	AMOUNT (GINI)	PRICE (EUR)	TRADER
8,903.42	8,369.21	0.94	Sandra ★ 96%
220.81	172.23	0.78	Frank ★ 82%
12,978.19	9,863.42	0.76	Derek ★ 100%
3,767.54	3,579.16	0.95	Long ☆ 74%
20,816.38	16,028.61	0.77	Johnny1 ★ 87%
11,318.79	9,734.16	0.86	SuperGirl ★ 91%
251.76	236.65	0.94	Natasha ★ 94%
10,377.65	10,000.00	0.91	Ramses ★ 84%
34,282.40	31,539.81	0.92	Deanna ★ 91%
13,091.61	10,866.04	0.83	Sparky ☆ 83%
2,330.18	2,027.26	0.87	Leona ★ 88%
38,169.68	34,352.71	0.90	Shelton ★ 78%
37,605.41	36,477.25	0.97	Christina ★ 100%
11,609.27	9,403.51	0.81	Burns ☆ 91%
39,255.97	32,582.46	0.83	Eunice ★ 78%
26,315.99	25,789.67	0.98	Oliver ★ 80%
22,104.64	20,999.41	0.95	Marvin ★ 94%
43,609.19	35,323.44	0.81	Bryant ☆ 87%
48,521.13	41,728.17	0.86	Molly ★ 78%
13,533.35	10,150.01	0.75	Sullivan ★ 72%
49,005.26	43,124.63	0.88	Thomas ★ 93%
30,336.22	23,358.89	0.77	Simpson ☆ 85%
17,651.63	14,474.34	0.82	Alex ★ 67%
2,094.16	1,717.21	0.82	Sandoval ★ 89%

300,648.15 GINI  
AVAILABLE BALANCE

10,876 GINI  
RESERVED IN OFFERS

3,517 GINI  
LOCKED IN TRADES

### GINI/EUR MARKET DEPTH

The chart displays the market depth for GINI/EUR. The y-axis represents the amount in GINI (0 to 890,000), and the x-axis represents the price in EUR (0.700 to 1.250). The left side of the chart (green) shows bid orders, and the right side (red) shows ask orders. The current market price is 0.869 GINI/EUR.

GINI: 3,529 OFFERS ▼

PRICE GINI/EUR

GINI/EUR: 0.869 ▼

**Seller's Offer**

- Min/Max Quantity: 100 to 10,000 GINI
- Purchase Price: 0.9053 (GINI/EUR)
- National Currencies: EUR, USD, JPY, CHF
- Cryptocurrencies: BTC, ETH

[See Additional Details!](#)

**Payment Types Accepted:**  
Bank Wire, Cash Deposit, Chase QuickPay, Crypto, MoneyGram, PopMoney, SEPA, Venmo, Western Union, Zelle

**My Purchase Details**

	Amount (GINI) to Buy		Price (GINI/EUR)		Total Cost (EUR)
	5,000.00	x	0.9053	=	4,911.50
	Payment Type: Bank Wire ▼		% from Market Price		
			+4.18%		BUY

Gini Network Peers: 26 (synced over Tor Network)
Version 0.52

## Technical Overview

The Gini Platform is comprised of two primary systems: The [Gini BlockGrid](#) and the [Decentralized Exchange](#), but the phrase "Gini Platform" encompasses all current and future systems that are built to process or facilitate transactions associated with the Gini cryptocurrency. The BlockGrid and Decentralized Exchange have been summarized on our Gini website. In this whitepaper, we present a technical overview of how these systems work.

In basic technical terms, Gini is a Dynamic Proof-of-Commitment (DPoC) cryptocurrency. The core Gini cryptocurrency has the following features:

# Gini: Blockchain with a Soul

- Cryptographic digital signatures to prevent fraudulent transactions.
- Anonymity *and* privacy *by default* based on homomorphic encryption with the BLAKE2 cryptographic hash function and multi-hop locks based on ED25519 elliptic-curve public key encryption.
- Automated stakeholder node voting to achieve consensus-based transaction verification.
- Vote delegation to ensure voting quorums, which ensures broad-based transaction consensus *and* broad-based democratic *human consensus* on major ecosystem governance issues.
- Hybrid DAG/blockchain database structure ("BlockGrid") to connect all transaction blocks in a linear, *immutable* historical chain, which achieves a unique combination of ledger integrity, high speed and throughput.
- BlockGrid provides public ledger integrity that is computationally efficient to verify back to the Gini genesis block.
- Built-in auditing mechanisms that protect user privacy and allow [user-authorized auditors](#) and *user-authorized* government authorities to audit transactions as required by each country's applicable laws.
- A database structure that enables easy implementation of aggressive pruning, sharding, and snapshotting; these features ensure long-run scalability, meaningful decentralization, and high speed and throughput.
- Exceptionally strong and inherent resistance to "double-spend attacks," "51% attacks," "DDoS attacks," and "Sybil attacks," among others, which provides strong assurance of public ledger integrity.
- Broadly attractive economic incentive structures carefully designed to create the most stable, equitable, sustainable and user-friendly ecosystem humanly possible.

## The Gini BlockGrid

**The Gini BlockGrid Stack.** The decentralized [Gini BlockGrid](#) is comprised of two software layers:

- **The Gini Settlement Layer (GSL):** Securely, anonymously and privately manages all the low-level currency and asset transaction settlement activity throughout the Gini ecosystem.
- **The Gini Computation Layer (GCL):** Securely, anonymously and privately manages all the more complex smart contracts and decentralized applications, which depend on the GSL for financial accounting and auditing. The GCL is designed to provide automatic enforcement of smart contract terms and conditions between counterparties throughout the Gini ecosystem.

This layered approach creates a clean separation between sensitive transaction settlement data and more computationally complex smart contract operations. This is the optimal foundation for building a diverse ecosystem of decentralized smart-contract-based applications and services while keeping the underlying settlement layer simple, scalable, private and secure.

# Gini: Blockchain with a Soul

## Architectural Design Features

Based on decades of experience building secure and scalable global payment processing systems and operating the only substantial nonprofit payment processor in the world, the Gini team is building the Gini cryptocurrency and Decentralized Exchange based on the following architectural design principles:

- **Simple and resilient architecture**, which reduces complexity and corresponding bugs and security vulnerabilities.
- **Inherently fast:** Currently, the BlockGrid architecture can process over 7,000 transactions/sec, but future optimizations can increase this significantly. In contrast, Bitcoin, Ethereum, and nearly all cryptocurrencies today still cannot process more than 20 transactions per second. Gini's transaction speed is only limited by the speed of the network connection between network nodes because each message between nodes fits into a single UDP packet (512 bytes), which results in the fastest speeds technically possible, *no matter what new cryptocurrency technologies emerge in the future*. This ensures that Gini is as future-proof as possible. See [this animation](#) to visualize the difference between Gini's transaction throughput (transactions per second) and other popular cryptocurrencies today.
- **Virtually instantaneous, *guaranteed* transaction confirmations** because each user has their own private blockchain within the Gini BlockGrid, which is updated asynchronously with *deterministic* confirmations. (This is in contrast to the less reliable *probabilistic* confirmations in Bitcoin and virtually all other cryptocurrencies.) This dramatically increases the speed, reliability, and security of Gini transactions.
- **Highly resistant to many types of attacks**, including 51% attacks, man-in-the-middle, DDoS attacks, Sybil attacks, among others. Also, forking within the Gini BlockGrid is impossible in all cases except under byzantine conditions. Specifically, forking can only occur when a malicious or malfunctioning node tries to attack *a particular individual blockchain*, but such attacks are easy to detect at the protocol level, and thus, easy to mitigate. Most importantly, because each stakeholder has their own private blockchain within the BlockGrid, when a malicious fork occurs, it is isolated to only that one user's private blockchain; so, no other stakeholders are impacted. This architecture dramatically reduces the number of potential attack vectors, which significantly reduces the cost and complexity of managing the Gini Platform.
- **A monetary system that is sustainable and based on rational, [real-world facts and actual economic history](#)**, not blind ideologies, unrealistic theories and models.
- **Account-based ledger (vs. Bitcoin's UTXO ledger)**, which is more intuitive for end-users and makes it much easier to implement Gini's unique [monetary system features](#) and [principles](#). The account-based ledger also makes it possible for the [Gini Trust Protocol](#) to automatically track the real-time money supply level of the entire Gini ecosystem without violating the privacy of any individual Gini stakeholder. This is essential to providing true transaction privacy and nearly instantaneous transaction confirmations while simultaneously protecting the integrity of the Gini money supply by ensuring that no new Gini cryptocurrency can ever be created out of thin air by hackers or protocol malfunctions. Any such anomalies would be detected in real-time, thereby triggering appropriate remedial actions at the protocol and/or administrative levels.

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- **Unique Dynamic Proof-of-Commitment (DPoC) consensus protocol**, which combines the strengths of the Proof-of-Work (PoW) and Delegated Proof-of-Stake (DPoS) protocols with the network security and ecosystem sustainability benefits provided by Gini's unique [Dynamic Guardian nodes](#). More specifically, Gini's hybrid DPoC protocol enables Gini to achieve the following:
  - Network resilience against spam and DDoS attacks using the network flood protection provided by simple, 1-second PoWs, which do not consume any significant electricity (unlike Bitcoin's computationally complex PoW);
  - Energy-efficient, consensus-based transaction verifications and responsible network governance with DPoS;
  - Broad-based ecosystem participation from the unique economic incentives created by Gini's DPoC.

## BlockGrid vs DAG vs Blockchain

Gini's particular database structure is called a "BlockGrid," which is designed to combine the most useful properties of a Directed Acyclic Graph (DAG) with the most useful properties of a blockchain. This unique combination produces an immutable data storage and retrieval system (i.e., a ledger) that performs with the speed of a DAG, but it has more structure than a typical DAG, which makes database pruning, snapshotting, sharding, and other optimizations possible that are typically very difficult (or impossible) with a pure DAG.

As a result, it's much easier to achieve long-run scalability, decentralization, fast transaction speeds, high network throughput, and sustainable ecosystem growth with Gini's BlockGrid than it is for cryptocurrencies that are built with pure DAGs or pure blockchains.

## Gini Computation Layer & GiniScript Language

We are building the Gini Settlement Layer (GSL) first. Then, after we have launched the Gini MainNet and demonstrated the GSL's reliability over 6-12 months of real-world operation, we will launch the Gini Computation Layer (GCL).

As part of the GCL, we are creating a simple, tag-based language ("GiniScript") that will enable relatively non-technical people to create simple smart contracts in the form of sale and purchase contracts, loan contracts, insurance coverage contracts, escrow contracts, service contracts, and many others. We expect GiniScript to be an integral feature of many real-world commerce applications that stakeholders throughout the Gini ecosystem will build with the Gini cryptocurrency on top of the Gini BlockGrid and corresponding [Decentralized Exchange](#).

At this time, we are not planning to provide a *Turing-complete* language or any language that can create substantially complex apps *directly on the Gini Settlement Layer* because the added complexity creates too many security risks and other potential problems (e.g., Ethereum's [DAO disaster](#)). Additionally, the vast majority of Gini stakeholders will simply want to create user-friendly smart contracts with basic IF/THEN

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logic to automatically hold their counterparties accountable to the terms and conditions of their contracts. So, they will be able to use GiniScript for the vast majority of real-world smart contract use cases.

However, we will encourage advanced developers to build more complex apps on the Gini Platform by using the Haskell programming language. Haskell is capable of producing *provably secure* apps of any complexity with stronger security guarantees than any other mainstream language, including C++, C#, Java, Python, etc. In fact, this is why [Gini's core architecture is built with Haskell](#).

## The Gini Trust Protocol

A "protocol" sounds technical, but it's really just a way of sequencing a series of events, steps, activities, or bits of data according to a clearly defined set of rules, syntax and semantics. Protocols exist in geopolitical affairs between nations, for heart surgeons in a hospital, for networking technologies, cryptocurrencies, and many other systems and situations in human existence. In fact, there can be numerous protocols operating at multiple levels of a system to govern or guide the behavior and performance of entities and networked systems at any given moment.

As a result, when we talk about "protocols," it's useful to remember that there is rarely only one protocol influencing the behavior, output, and outcome of a system. Usually, there are multiple protocols operating and influencing the dynamics of a system simultaneously; and this is true for the Gini Platform.

The Gini Trust Protocol is conceptually summarized [on the Gini website](#). Here we discuss more precisely how the protocol works and how it differs from other cryptocurrencies.

## Dynamic Guardian Nodes & Dynamic Proof-of-Commitment

Several features of the Gini Platform were originally inspired by two other well-respected cryptocurrency projects called "Nano" and "Cardano," both of which are Proof-of-Stake (PoS) cryptocurrencies that have been operating publicly with no hacks since 2014 and 2017, respectively. Although there are good reasons to admire Nano and Cardano and learn from their strengths, they have made several architectural design choices that lead to unsustainable outcomes. So, let's discuss how Gini is different.

As a *Delegated* PoS (DPoS) system, Nano delegates are called "Representatives". Like all DPoS systems, Nano Representatives can vote on behalf of other stakeholders that choose to delegate their votes to a Representative. This is desirable for many stakeholders because (1) they may not want to keep their computers running 24/7 to participate in the consensus protocol voting process and (2) they may not own enough Nano wealth to qualify to participate directly in Nano's consensus protocol.

To be a Nano Representative and participate in the Nano consensus protocol, a Nano stakeholder must own at least 0.1% of all Nano cryptocurrency wealth, aka "stake". (This means there is a maximum of 1,000 Nano Representatives.) Non-Representative nodes do not vote in Nano's consensus protocol, which helps to reduce network traffic and preserve transaction speed, but it also creates significant negative side-effects, which will become clear shortly.

## Gini: Blockchain with a Soul

Gini's unique Dynamic Proof-of-Commitment (DPoC) protocol differs from DPoS in several important ways. For example:

- On the Gini Platform, Representatives (delegates) at the protocol level are called "Dynamic Guardian nodes". In this case, a Guardian "node" is simply Gini's automated, decentralized software running on your desktop or mobile computer, which requires no human interaction. Anybody who has used Bitcoin or any other cryptocurrency should be familiar with this process.
- Gini Guardians are *selected automatically and randomly* based on a more egalitarian set of requirements ([here](#) and [here](#); collectively, these are the "Guardian Requirements").
- Gini Guardians serve for random periods of time called "Guardian Sessions", which can last for several minutes or hours. In contrast, Representatives in other DPoS systems are relatively static and a large majority of them are expected to remain *in power* for months, years or forever . . . as long as the wealth rank of the largest stakeholders remains relatively static.
- Gini uses a randomized lottery algorithm to dynamically select Guardians from a continuously updated eligibility list ("Guardian List"). Candidate Guardians are continuously and automatically added or removed from the Guardian List based on their compliance with the Guardian Requirements. (Note: Cardano's lottery concept is similar, but see below why Gini is different.)
- Gini's random Guardian selection creates an exponentially more secure system because it's exponentially more difficult to hijack 51% of the nodes on a network when the Guardians are randomly selected and randomly rotating in and out of Guardian Sessions.
- Gini's random Guardian selection is based on a more diverse set of requirements, which creates more opportunities for a more diverse population of stakeholders to participate in the consensus process. This creates broader wealth creation and distribution opportunities and more ecosystem sustainability, which is technically prudent and philosophically consistent with Gini's egalitarian values and spirit.
- The Guardian Requirements place strong emphasis on each node's general hardware and bandwidth capabilities, which ensures that Guardian diversity does not result in poor Gini Network performance. However, these capabilities are widely available to virtually everybody in nearly every country without needing to spend enormous amounts of money on [super computers and crypto-mining facilities](#).
- Gini's random Guardian selection enables Gini to maintain high network performance by limiting the total number of Guardians at any particular moment (like Nano's 1,000 Representative limit), while simultaneously making it *realistically* possible for millions of Gini nodes to become a Guardian at any moment. This gives the Gini Trust Protocol a unique advantage: maximum network performance, maximum Guardian diversity and maximum network security.
- Nano's relatively static Representative list and wealth-driven eligibility process will inevitably lead to the same wealth and power concentration problems discussed earlier in this whitepaper and in many areas of the Gini website. In fact, all (D)PoS-based cryptocurrencies today suffer from this problem because their creators generally perceive wealth concentration as *a feature*, not a flaw.

## Gini: Blockchain with a Soul

- Including a random and more diverse population of ecosystem participants at the protocol-level eliminates many socioeconomic problems and makes the "Network Stability" component of the [Gini Value Streams System](#) more egalitarian. Without a protocol-level mechanism to share the work *and* the wealth throughout the Gini ecosystem, there would be no automatic, objective and efficient way to prevent the techno-aristocracy and crypto-oligarchies from dominating the Gini ecosystem like they dominate all other cryptocurrencies today.
- Nano does not reward Representatives (or anybody else) with any block rewards because the Nano team does not believe in charging transaction fees; so, there is no meaningful or sustainable way to reward anybody for participating in the Nano ecosystem. This is a philosophical decision, which we believe is fatally flawed for [many social and economic reasons](#).
- In contrast to the broken incentive structures in other cryptocurrencies, Gini rewards Guardians *as a team* after each newly verified transaction. Specifically, a random number of Guardians participate *as a team* in the automated *quorum of nodes* that comes together to verify each transaction. That *team performs work* on that transaction. Thus, *that team of Guardians* has created and added value to the ecosystem by increasing the integrity of each transaction, which incrementally increases the integrity of the entire ecosystem. The [Value Streams System](#) is responsible for automatically rewarding stakeholders with more Gini whenever they (or their automated nodes) add value to the ecosystem because that's how value should flow through a sustainable economy. This is another example of how precisely measuring and rewarding value created and distributed throughout the Gini ecosystem is a unique feature of Gini Capitalism.
- The Nano code base is written in C++ (v.11 & 14). In contrast, the Gini Platform is built with the Haskell programming language because Haskell provides [much stronger security guarantees, greater productivity, among many other benefits](#).
- Cardano's Ouroboros Proof of Stake (PoS) protocol is based on a group of "electors", each of which must own at least 2% of all Cardano (ADA) stake. This produces a *theoretical* max of 50 electors, but in practice, the number is much smaller because the distribution of Cardano wealth, like all cryptocurrencies today, is heavily concentrated. (And [trickle-down economics will not change this](#).) The electors coordinate their votes to select a periodic "slot leader" to create each new Cardano block and receive the corresponding block rewards. The list of electors is almost completely static and based exclusively on crypto wealth. From a humanitarian perspective, this process creates an undesirable concentration of wealth and power on the network.
- Like other DPoS systems, Cardano has a delegation mechanism, which is based on a concept called "stake pooling". Conceptually, this is similar to Nano's Representatives: A stakeholder can delegate their voting power to a Cardano stake pool and the pool operator can then vote with the combined weight of all the votes that have been delegated to the stake pool. However, in this case, the voting is focused on system upgrades and governance issues; nevertheless, the entire process is based exclusively on who has the most wealth, not a more diversified set of criteria like we have with Gini at both the protocol level (Dynamic Guardian nodes) and at the human level (Gini Ambassador nodes in the [Community Governance System](#)).
- Cardano's slot leader selection process is determined exclusively by how much wealth a stakeholder has because Cardano's lottery algorithm ("Follow-the-Satoshi") works like lottery tickets: 1 atomic Cardano currency unit ("Lovelace") = 1 lottery ticket. But this is like saying, "1

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dollar = 1 vote," which is exactly what has corrupted the political systems and economies in the U.S. and many other countries today. "1 currency unit = 1 vote" inevitably leads to systemic corruption because it guarantees that the richest fiat or crypto stakeholders will always be able to manipulate ecosystem and economic policies for their own benefit.

- Cardano's consensus protocol lottery is mathematically designed to give more weight to stakeholders that are already rich; so, the richest stakeholders will always have a much higher probability of winning the lottery in direct proportion to their Cardano wealth. This simply perpetuates the wealth and power of a tiny number of founders and investors who were lucky enough to get into Cardano early. From a humanitarian perspective, this is intolerable.
- In contrast to Cardano's consensus protocol lottery, the Gini Trust Protocol lottery is not based on "1 dollar = 1 vote". Instead, the Gini lottery is more like a treasure hunt: If you make an effort to participate by ensuring that your node fulfills the egalitarian Guardian Requirements, you will have the same probability of finding the treasure as everybody else. It doesn't matter if you have 1 Gini currency unit or 1 billion units, your probability of success is the same. This is an example of the fundamental respect for humanity that is thoughtfully built into every aspect of Gini Capitalism.
- There are other differences between Cardano and Gini. Among others, Cardano does not provide true transaction privacy, its monetary system is incompatible with Gini's monetary system (both technologically and philosophically), and the Cardano architecture is not designed to achieve the kind of transaction speed, throughput and user-friendly experience that we are creating for Gini.

## Network Architecture

**Peer Discovery Protocol.** Gini uses a fast flood-fill peer-discovery algorithm routed over UDP, including UPnP and UDP hole-punching for greater speed and NAT traversal, which results in decentralized distribution of network traffic loads to maximize Gini network availability. The Gini protocol is compatible with IPv6.

**Pending Compatibility with IP Multicast.** IP multicast does not work over the TCP network protocol, which is one of the most significant reasons why Gini is based on the UDP network protocol. IP multicast provides a dramatic increase in network efficiency because it is mediated at the hardware layer of a network and enables *selective broadcast* to a dynamically specified group of nodes on a network, which is ideal for a cryptocurrency consensus protocol.

**All Modern Networking Equipment Supports IP Multicast.** Updating all Gini nodes to use IP multicast instead of the much less efficient application layer protocols used in all other cryptocurrencies today (e.g., Kademia, Torrent, flood-fill, etc.) will dramatically reduce the bandwidth required by Gini nodes because multicast consumes approximately  $1/N$  of the bandwidth compared to  $N$  separate unicast clients. For example, if 1,000 network nodes are communicating with each other, IP multicast requires only 1/1,000th of the bandwidth that typical unicast communications would require.

**Bootstrapping.** Gini uses the TCP network protocol for the data-intensive bootstrapping process when a Guardian node (aka "full node") connects to the network for the first time and needs to download the entire ledger. But for all other network operations it uses UDP, plus UPnP and UDP hole-punching for NAT traversal. This approach gives Gini an optimal balance between network speed and reliability.

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## Community Governance System

Gini has an egalitarian Community Governance System loosely based on the United Nations model, but without the [corruption](#) caused by [coercive governments and giant corporations](#) that use their financial and military power to manipulate the UN's decision-making processes. Specifically, Gini's Community Governance System is based on the concept of "Ambassador nodes." When a major Gini governance decision is presented to the Gini Community, stakeholders can either vote directly *and securely* by casting their vote through the Gini software GUI or they can delegate their votes to Gini Ambassador nodes within the GUI to vote securely on their behalf.

To learn more about the Gini Community Governance System, please see our [detailed overview](#).

For readers that want to learn more about the technologies that power the Gini Platform, please visit the [Technology section](#) of the Gini Knowledge Base.

## Partners & Stakeholders

Before anybody purchases Gini cryptocurrency, they should read [Should You Participate in the Gini Ecosystem?](#) and [Are Cryptocurrencies a Scam?](#) and [Should Gini Operate in the United States?](#) and [Can Gini Reach \\$10,000 Like Bitcoin?](#) (That was written before Bitcoin reached nearly \$20,000 in December 2017.)

If Gini achieves a substantial level of adoption, the Gini cryptocurrency will drive significant value creation and distribution throughout the global economy, which will lead to strong demand and corresponding Gini price appreciation. We are working on many unique systems and features based on our decades of experience and deep knowledge of ecommerce, global payment systems, and [developmental economics](#). So, we rationally believe Gini can achieve substantial adoption over time.

Given the wide range of prices for other cryptocurrencies (from pennies to over \$19,000 per unit as of early 2018), and given that life is too short to waste time on subjective and arbitrary debates, we have chosen to follow Albert Einstein's wise advice: "Everything should be made as simple as possible, but not simpler." So, below is our simple and reasonable Gini pricing structure:

<b>Pre-Launch Discounted Price</b>	1 Gini = 0.5 USD
<b>Launch Price</b>	1 Gini = 1 USD
<b>Post-Launch Market Price</b>	Based on Supply & Demand

We also provide other ways for Gini stakeholders to [participate in the Gini ecosystem](#).

**Stakeholder Distributions.** After studying many other cryptocurrencies over the years, we are not aware of any other cryptocurrency that has been created with as much careful attention to detail regarding the distribution of wealth and power within their ecosystems. To learn more about how the Gini

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cryptocurrency is allocated between the general public, founders/investors, Gini employees, and ecosystem partners, please read [Gini Stakeholder Distributions](#).

## Gini Launch Event

Compared to most other cryptocurrency projects, the Gini team has already invested a huge amount of time and resources into the Gini Foundation and we will continue to do so for the rest of our lives because this is a life-long passion and mission for us. However, we can't launch a new era of Gini Capitalism by ourselves. It's going to require a lot more human and financial resources.

**Minimum Launch Target: \$10 million.** Given that several ICOs have raised over \$1 billion (and they are scams or only marginally valuable to society), it will be deeply depressing if Gini does not generate *at least* \$10 million during the Gini Launch Event. In fact, if we don't generate at least \$10 million, we will return all the money back to all Gini Launch customers because falling short of \$10 million means:

- (1) There are not enough humans on Earth who recognize the problems described throughout this whitepaper; so, there won't be enough demand for Gini's unique solutions.
- (2) We actually need much more than \$10 million to execute Gini's long-term roadmap. But with \$10 million, at least we can hire more people, finish building the Gini Platform (including the [Gini School of Economics](#)), and present a strong case to the general public and leaders in governments around the world about why privacy rights and Gini Capitalism should be supported. Then, we could work to attract additional financial support to increase the probability of Gini Capitalism becoming an alternative to toxic bank capitalism, which is destroying democracy and capitalism worldwide today.

**Regulatory Issues.** We must manage [complex regulatory considerations](#); so, for now, Gini is self-funded by the Gini team and the Gini cryptocurrency is not available to the general public until we receive clarity from the SEC regarding our detailed [SEC analysis](#). As a result, because the U.S. market is so large, we are waiting to execute the worldwide Gini Launch until after we receive the SEC's response so that all humans on Earth have the same chance to participate in the Gini ecosystem at the same time. In the meantime, please [join the Gini Newsletter](#) to be alerted when the worldwide Gini Launch Event begins.

## Thank You

We deeply appreciate your interest in Gini and we look forward to collaborating with our growing Gini Community to organically grow Gini Capitalism into a viable alternative to the toxic status quo.

