

# Democracy White Paper v1.0

## Introduction

Democracy Association is an independent and entirely governed body that consists of organizations, government agencies, and private companies to oversee the functioning and development of Democracy networks payment infrastructure and A.I. systems.

The Democracy Association's mission is to disrupt the traditional process of money lending-borrowing, International payments, and world reserve currency to support international free trade and how the global finance and monetary system operates by becoming a compass to guide the world economy's health through combining Blockchain and Machine Learning like never before. Democracy will leverage the payments' data and Defi patterns in lending-borrowing mechanisms and data gathered from international trade and historical data to train the Machine Learning algorithms to understand the state of worldwide finance and each country's economic condition despite Democracy's presence in that territory. With Blockchain and Machine Learning as the core technologies used at Democracy, we intend to eliminate the world's dependence on Centralized Banks and Financial Institutions by giving people to hold control of their money. Countries and Individuals can use these tools to predict the impending economic crisis with high accuracy than ever before, as machine learning proved to be the go-to solution for many world problems. Our Machine Learning models are trained with various kinds of datasets consisting of historical, present, and predicted data with trillions of parameters. Democracy will further accelerate the Banks' decentralization through DeFi to make the most effective decisions, which will reduce the chances of falling into recession, depression, or extreme inflation due to bad governance.

To foster the financial inclusion of 1.7 billion unbanked or 31% of the population, these tools are necessary to make them included in the global decision-making process. Since the concept of money came into existence, very few qualified people were considered to do those jobs and led the world into a crisis mode every ten years or less. With the introduction of Machine Learning in decision-making, we can reduce those mistakes to a great extent. Though we cannot achieve 100% accuracy as it gets more complicated over time, we believe this will be the first step in that direction.

# History

## Introduction to the medium of exchanges

### Gold Standard (pre - 1944)

Humans are the most intelligent living beings, and it has been proved repeatedly as we figured out how to trade goods with another. The perfect example is the barter system that is widely used to exchange one valuable good for another of equivalent value. A barter exchange requires finding a party who has what you want and who wants what you have. However, this form of trade is not viable as goods exchanged cannot be broken into small units, and there is a potential loss for any one of the parties involved in the trade as the relative value of things changes all time.

The mining of precious metals like Gold and Silver made that simpler as these metals can be broken into small measurable units, and they're limited in supply, which implies that their value will increase eventually. These metals were considered money for thousands of years, and they gave rise to many possibilities like paper currency and credit as a layer onto gold. Private banks started issuing these paper currencies backed by gold held securely in the vaults. These paper currencies representing a share of that gold could be used as mediums of exchange.

### Bretton Woods System (1944-1971) and Keynes's proposal

The [Bretton Woods System](#) was an agreement between 44 Allied nations to bring a monetary order intended to govern the monetary state among independent states. This agreement gave the United States dollar the status of reserve currency as US-backed its dollar with gold, and dozens of other countries pegged their currencies to the dollar. Many countries held U.S. Treasuries as a form of reserve collateral that was good as gold. This conference also established institutions like IMF and IBRD (a lending arm of the World Bank Group).

In Bretton Woods Conference, the United States and Britain developed two rival plans drafted by [John Maynard Keynes](#) and [Harry Dexter White](#) for British and U.S. treasuries. White's proposal, which focused on American interests, was adopted, and the draft proposed by Keynes was not adopted because of the overwhelming economic and military power of the United States. White's plan focused on global intervention in an imbalance only when it was caused by currency speculation. In contrast, Keynes' proposals would have established a world reserve

currency (which he thought might be called "[bancor](#)") administered by a [central bank](#) vested with the possibility of creating money and with authority to take actions on a much larger scale.

Democracy's mission of creating a world reserve currency has similarities with Keynes's supranational currency for international trade with an [International Clearing Union](#) similar to Democracy's proposal of building an Association with every country as a member to regulate and monitor.

## Nixon's Shock and Dollar's as medium of exchange and Petrodollar

As nations started losing trust in U.S. Dollars because of growing BoP deficits and declining gold reserves, on August 15, 1971, United States President Richard Nixon abolished the Bretton Woods System of international financial exchange. This move made the fixed exchange rate system become a [floating exchange rate](#) system. The currency exchange rates no longer were governments' principal means of administering monetary policy. Though the dollar is not exchangeable with gold, most of the world still maintains dollars as its reserve currency.

The free-floating currencies started showing their effect when the BoP surplus countries disagreed with appreciating their currency to improve BoP deficit countries' financial state. Many argue that the leading cause of the 2008 crisis is imbalances in BoP among developed and developing nations.

Maintaining a single country currency as a reserve currency had many loopholes like; the country's holding reserve currency status must be willing to supply the world with an extra supply of its currency to fulfill world demand for these foreign exchange reserves leading to a trade deficit and tensions between its national and global monetary policy.

The solution for these currency devaluations and crises will be updated soon.

## Special Drawing Rights (XDR or SDR)

[Special Drawing Rights](#) (SDRs) were created in 1969 as supplementary foreign exchange reserve assets defined and maintained by the IMF to supplement a shortfall of preferred foreign exchange reserve assets, namely gold and U.S. dollars. SDRs are [units of account](#) for the IMF and not a currency by itself.

SDRs are allocated by the IMF to countries and cannot be held or used by private parties. They are issued to "provide liquidity to the global economic system and supplement member countries' official reserves." The value of an SDR is based on a basket of key international currencies reviewed by the IMF every five years. The weights assigned to each currency in the XDR basket are adjusted to consider their current prominence in international trade and national

foreign exchange reserves. As of 2015, the XDR basket has consisted of the following five currencies: U.S. dollar 41.73%, euro 30.93%, renminbi (Chinese yuan) 10.92%, Japanese yen 8.33%, British pound 8.09%.

Drawbacks of SDRs and their solutions will be updated soon.

# Introduction to Blockchain and Machine Learning

## Blockchain, Bitcoin, and DeFi

Blockchain technology is adopted in various industries thanks to its core properties of accessibility, transparency, and immutability. Its invention as a system to record transactions made in bitcoin (developed by Satoshi Nakamoto in 2009) and other cryptocurrencies are maintained across several computers linked in a peer-to-peer network gave rise to new possibilities in money and currency without any centralized issuer or controller. However, it has its own set of problems like high energy consumption to validate a transaction because of its Proof-of-Work mechanism. The energy consumption has been addressed by various other blockchains that adopted the Proof-of-Stake consensus mechanism that led to a rise in transactions per second (TPS) and helped the public and businesses utilize this technology everywhere without any transaction delays. Democracy uses the same Proof-of-Stake consensus mechanism, and we are committed to its development and scaling it further.

Bitcoin has the supply limit capped at 21 Million, which is not ideal in a continually changing world where it is proven that gaps in supply-demand will lead to price inflation or manipulation. A limited supply will cause its price to reach levels that are impossible to use in everyday finances. On the other hand, the concept of unlimited supply used by other blockchain projects has no distinction from the quantitative easing that governments commonly practice worldwide.

Endless/Limited supply of anything had proven that no matter what condition the economy is in, the devastating consequences will show its effect on the world's poor and middle-class. The experimental feature of letting Artificial Intelligence decide the interest rates, amount of currency supply to be circulated, price of any asset, and the real value of a currency/stock will eliminate the lack of experience in investing, emotions, fear, and greed take over. It also gives High Networth Investors and Giant Institutions zero chance to manipulate prices as A.I. controls the supply and prices.

## DeFi

DeFi is short for "decentralized finance," an umbrella term for various financial applications in cryptocurrency or Blockchain geared toward disrupting financial intermediaries. DeFi expands Blockchain from simple value transfer to more complex financial use cases. Cutting out intermediaries from all kinds of financial transactions such as loans, insurance, crowdfunding, derivatives is one of the primary advantages of DeFi.

Through DeFi, Democrazy will create a lending platform that connects borrowers to lenders. Though DeFi lending is collateral-based, meaning in order to take out a loan, a user needs to put up collateral; Democrazy is working on implementing different mechanisms where the A.I. systems will take charge in deciding who is eligible and who's not.

In the worst-case scenarios like run on the capital or loss of coins due to any attack, apart from buffer capital, Democrazy also wants to create a deposit insurance subsidiary similar to Deposit Insurance and Credit Guarantee Corporation(DICGC) to protect Democrazy users' deposits.

## Artificial Intelligence and Machine Learning

Machine Learning usage in the computer science fields started in the early '90s and 2000s though it has its roots since the '50s in a theoretical way. Fast forward to 2021, this technology's usage has improved drastically for research and use in different fields like Medicine, Autonomous Vehicles, Space, Robotics, Etc., When it comes to finance, it is being implemented to predict the prices in stock markets, analytics, some primary uses like suggesting users on their spendings and few more. The recent improvement in training algorithms with billions to trillions of parameters(OpenAI's GPT-3, which uses a measly 175 billion parameters and Google's trillion-parameter A.I. language model ) and Deepmind's [AlphaGo](#) defeated a professional Go Champion and their another model AlphaFold can accurately predict protein structures. These developments have shown us much potential to accelerate research in this field before reaching the point where machines surpass human intelligence. These models can minimize human error, which might cause catastrophic events like the 2008 Great Financial Meltdown. These models' exact role in the decision process is still unclear as they're never introduced in finance before Democrazy. We will work towards this transition from 100% human decision to a considerable combination between humans and A.I. models.

The trust in algorithms is improving as they're showing tremendous improvements and reaching beyond expectations. There are ups and downs with these models, but our ethics and safety

practices will not allow anyone, including members associated with Democrazy, to use them for causing harm or damage to any individual or community or a country as a whole. Democrazy will ensure that its models will be free from bias and have greater fairness and transparency built-in. From the inception, Democrazy will work towards open-sourcing the critical parts of the system, which needs an evaluation from the public before implementing them to make decisions.

## **Reserve currency and a Unit of Account**

### **Unit of Account currency**

The only way to know the actual value of any single currency and the events that are affecting the economy representing that currency is by creating a Global currency that acts as a Unit of Account whose value will be adjusted by our algorithms that are continually absorbing the payments and lending-borrowing trend, International finance trends, and various events that directly or indirectly affect any single economy or global economy. This will reduce the chances of going wrong with the decisions made by policymakers, economists, and every single individual. Though these tools' primary beneficiary is the average citizen, ultimately, the global finances' decision-making power will be in policymakers' hands. So we intend to make it easy for governments to utilize these tools for better decision-making to impose the right amount of taxes, adjust prices of goods based on inflation/recession, eradicate poverty/inequality, and reduce the probability of going wrong with money management.

The concept of world currency might be new to everyone, but still, humanity is familiar with these kinds of global currencies like gold and bitcoin, which act as a hedge or haven when people lose trust in fiat currency, Government decisions, and during events such as Pandemics, and Wars. The introduction of a Global Currency to use as a unit of account, which acquires its actual value from events that would have a real impact on our daily lives, economies, and our planet, is a game-changing innovation in the world of finance.

The existing reserve currencies that contain a basket of currencies from developed economies will not represent the global events, as they are subjected to the changes to the monetary policy made by the governments of their respective countries, and those currencies' value depends on the domestic and international trade. We believe that to know the current events and upcoming trends that might impact developing or underdeveloped countries; they should be treated differently and not compare their currencies with developed economies. The factors that influence any underdeveloped nation's economy might not affect the developed nation in the same way, so it is necessary to change the policies directed towards such countries to improve their economic situation. Democrazy will always focus on such issues and develop solutions for them.

# **Democracy Association Council "A" and "B"**

The Democracy Association Council comprises one representative per Association Member. These representatives are responsible for the decision-making and coordinating with the authorities, and overseeing the platform's role in Global Finance.

The council is further divided into two as there is a need for different rules & regulations with financial and A.I. systems to comply with the world's regulatory authorities.

## **Democracy Association Council A**

Democracy Association Council A or the council for A.I. will focus on all the things involved with our A.I. and ML systems. The number one priority of this council is to prevent the usage of these A.I. tools for causing harm or damage, targetting, or surveilling Etc., The council will focus on safety, upholding standards, avoiding unfair bias Etc., The council will also include members from different races and ethnicities to shape our A.I. systems to treat everyone equally no matter who they are and where they belong.

## **Democracy Association Council B**

Democracy Association Council B or the Blockchain council will improve this early-stage technology and make it work in a decentralized manner. The council will ensure that these systems never prioritize any single party and maintain sufficient reserve in liquid form for bank runs.

## **Data Sources/Providers**

The crucial path to achieve our mission is by training our models to have enough training to give the desired results with high accuracy. This can be achieved if there is sufficient amount of data is available to train those models. With the increased adoption of the internet, there are enormous datasets of various types, but the problem arises when we need to collect, sort and train. The data we collect shouldn't be containing any bias or harmful content that might train the models to treat unfairly and cause harm. To avoid these situations, we will need to go through the data thoroughly and pick the data providers after multiple background checks. Democracy



Association will be transparent and provide data providers' details to the public before approving their data to train the models. The Association will take public feedback about the data we train and any data that is not fitting with our principles.

## Democracy Reserve

Each single Democracy coin representing the individual currencies present on the Democracy network is backed by an equal amount of fiat currency and commodities like gold and silver. To be on the safe side and meet the authorities' requirements, we will put aside buffer capital for emergency use cases like bank run or difficulties in liquidating reserve commodities to meet the demand.

Initially, Democracy itself manages the reserve obligations, and gradually we will partner with third-party reserve providers. There will be no compromise in filtering these reserve providers, and Democracy will choose them based on the parameters like transparency and level of decentralization.

There is a misconception that these kinds of digital currencies will substitute for a country's official currency. Democracy will never mint additional coins that are representing any countries currency other than the reserve we hold. Democracy will only mint the new global reserve currency based on our A.I. systems suggestion and not on our reserves. This global reserve currency that we are minting will promote financial inclusion in underdeveloped nations and control the speculations on stocks, currencies, and commodities prices. As mentioned earlier, this global reserve currency will act as a unit of account for everything finance.

We want to mention that the global reserve currency we are minting will act as a security and not as the country's currency. We want everyone to view it as a hedge against speculation and use it to promote finance's democratization and reduce the monopolistic power of a developed country and few banks. As the days pass, we believe that people's trust in A.I. systems will improve and adapt our reserve currency for transactions free from sanctions. This will help individuals and countries facing sanctions without any substantial reason but only based on hate towards others.

The decision to allow our reserve currency usage in any country will depend on the approval of the democracy network consisting of a diverse set of users who will be provided with the consequences of their actions through our A.I. systems' predictions.



# Democracy Core

Democracy core is the term we are using to represent the underlying software for payments, lending/borrowing, and A.I. systems. It can be termed as Democracy core for Blockchain and Democracy core for A.I. The initial deployment for the Democracy core for Blockchain will be based on Hyperledger Fabric, and gradually we will shift towards our own in-house built software. The core for A.I. systems will consist of multiple frameworks, and we will update it as soon as we start implementing them for testing purposes. Democracy will open-source both core software to be more transparent and responsible.

## Democracy Labs

Democracy labs will act as a Democracy Association subsidiary focused on building and improving the Blockchain and A.I. systems. It consists of researchers, engineers, and the developer community to research the upcoming trends in technology.

## Global Events

For the past several centuries, humanity mostly neglected the importance of global events on their finances. No matter which country they are in, the consequences of a single action or event will impact everyone. It became more and more inevitable as globalization took place. With increased connectivity, the money flow between nations and individuals has become easy and fast. This also increased our dependence on the banks and people who gamble in the stock market and with people we allowed to manage our money. The role of every global event in the daily lives and finances is not given much importance before as the people at the top who worked the direction of economies didn't want you to know the importance of these events, Democracy's introduction of A.I. systems to absorb global events and predict prices based on their importance in your finances will not only bring transparency to this process but also decentralize the power and reduce speculation which in turn will lead to the rapid development of underdeveloped nations and peoples' economic conditions in developing countries.

Few global events that might impact the state of the economy

1. GDP\*
2. GNP\*
3. GNI\*
4. Poverty
5. Unemployment and employment rate\*
6. Environment
7. Research achievements
8. Education
9. Defence spending

10. Trade wars\*
11. Military conflicts\*
12. Agriculture output
13. Companies quarterly reports\*
14. Daily news on companies(Sector Wise)
15. Healthcare data
16. Viruses data
17. Political stability and instability data
18. Countries debt\*
19. Stock markets sentiment\*
20. Real estate data\*
21. Precious metals data
22. Wealth distribution data
23. Trade groups formation between countries
24. Elections data\*
25. Credit Cards data
26. Tech Advancements
27. Terrorism
28. Happiness Index
29. Insecurities among minority communities

\*The parameters that are considered differently for every country.

## Safety and Ethics in A.I.

Democracy aspires to create technologies that solve significant global financial problems and help people in their daily lives. We are optimistic about A.I. and Blockchain's incredible potential to empower people, widely benefit current and future generations, and democratize finance. We'll sign public pledges against using our technologies to cause harm and damage.

As our experience in this space deepens, this list may evolve.

**Note:** This is an incomplete document released to give a glimpse of what we're working at Democracy; there will be changes to it regularly.

### References:

1. <https://www.diem.com/en-us/white-paper/>
2. <https://ethereum.org/en/whitepaper/>
3. <https://wikipedia.org/>

