The American Blockchain

In order to trust the Blockchain we must trust the hard drives, the actual computers that store the entire Blockchain history, these computers also process transactions on the Blockchain. We must also 'trust' who has control over these computers. Depending on the code of the Blockchain these computers also create block rewards; this would be the inflation rate of that Blockchain, if there is not a fixed limit of coins for that Blockchain. These computers are divided into a few groups and will be referred to by these terms for the rest of the paper; Miners are proof of work, they require more energy to earn block rewards. Pools are proof of stake, they require the coin of that Blockchain to be staked to the pool. The block rewards are paid to the pool and then distributed to the individuals depending on how many coins they have staked (Cardano stake pools would be a great model to follow). Nodes can be a full or partial Node, they process transactions and have a small part of the Blockchain saved. They rely on Pools or Miners for certainty regarding the authenticity of the Blockchain, they receive no block rewards. Miners, Pools, and Nodes are what keep track of the transactions on the Blockchain, if an invalid transaction is processed by one, it will be detected by the other Miners, Pools, or Nodes and it will be rejected. This does not compromise the Blockchain, and happens all the time, the Decentralization of the Blockchain is key to keep invalid transactions from be accepted. An invalid transaction is anything that does not compute at the input or output level of the transaction. Coins that don't exist, taking coins from another wallet and moving them to your own, any hack or attempt to scam the Blockchain, is all seen as an invalid transaction and is rejected. If 51% of Miners or Pools are controlled by one or several individuals, they could change the Blockchain and it would accept invalid transactions. This is called a 51% attack.

Transactions are anything that needs to go into a block on the Blockchain. Tokens and Non-Fungible Tokens are separate from the Blockchain; however they are built onto the Blockchain so they are included in the transactions that are processed by the Miners, Pools, or Nodes. Coins are representations of the Blockchain itself, how the coins are used and how many can be created is what is put into the code of that Blockchain. Blockchain technology is a very secure way to send, receive, and store information. The purpose of this paper is to connect the Government to the Blockchain, there are many resources that have great information on Blockchain technology, however this paper will not discuss that technology. Blockchain's can be split into two parallel chains, this happens when a hard fork is preformed on the Blockchain code. The new Blockchain will be similar but not exactly the same as the original, changes can be anything from updates to the Blockchain, the inflation rate, or how transactions are processed. They are sometimes needed, and have happened before, they are not necessarily bad; they should only be done as a last resort. Most updates to the Blockchain can be done

using a soft fork, this still changes the code of the Blockchain but doesn't create a parallel Blockchain. Forks are needed they are basically like a software update, given to all Miners, Pools, and Nodes. The Miners, Pools, and Nodes have to choose to run the update or not. If they don't they might not be able to send or receive information on the Blockchain, and might not receive a block reward. So it is beneficial for the Miners and Pools to run the updates, however if enough Miners and Pools do not update it would lead to a hard fork in the Blockchain.

There are many ways to set up a Government Blockchain, not all of them are good and not all of them are bad. What follows is an example of how the Blockchain can be Decentralized in a way that mirrors the checks and balances of the United States of America, and does not limit or infringe on the freedoms of the individual.

Federal Reserve Pools; 50 Pools

They will run 50 pools one for each State, the pools should be located in the respective State. This will Decentralize the Pools and limit the effect of one or more going off line due to natural or manmade disasters. The Pools will collect block rewards depending on how many coins are staked to the Pool, this will be similar to Federal Bonds today. Investors will stake large amounts of coins to the Fed Pool, and they will receive block rewards (more coins) based on the number of coins they have staked. These are regular payments that may vary in the amount earned each payout, however over time it will average out (Cardano stake Pool rewards would be a good model to follow). The Federal Reserve could distribute all block rewards to stake holders, or keep a percent for maintenance or as a revenue stream for the Federal Government. With direct control of all Pools the Federal Reserve could (not saying they will) change transactions on the Blockchain. Even if we do trust them not to change the Blockchain, with only Fed Pools there would be no other way to verify the authenticity of the Blockchain.

State and County Pools; 50 - 3,006 Pools

At least one Pool per State, County level Pools could be run by the County or the State. These Pools could only be staked to if you are a resident of the State or County. The percent of block rewards distributed to the stake holder can vary from State to State. If more is kept for the State, this revenue could pay for State level projects. If more is distributed to the stake holders, individuals in that State would earn more block rewards then in other States. At the State level Government, public officials could decide to use the money for public projects, or to pass that money on to the residents; either way the individual of that State benefits. This also allows for verification of the Blockchain at the State level, a safe guard if the Fed Pools ever try to change the Blockchain.

City Pools; 0 – 19,502 Pools

Some Cities may not want or need a Pool depending on the location or population of the City. However they must have the right to run their own Pool for verification of the Blockchain if they chose to. Cities would only allow residents of the City to stake, and the block reward percent would vary City to City. The City would also be able to make decisions on if block rewards are passed on to local residents or used for City projects, either way the individual of that City benefits. This allows for verification of the Blockchain at the City level, and the more Cities that run Pools further Decentralize the entire Blockchain, making it more secure.

Full or partial Nodes; Any number of Nodes

Any individual or company can run a Node, they receive no block rewards and depending on the Node size may require a Pool for some transaction verifications. This can be many Pools linked to the Node or just local City or State ran Pools that are linked, it is up to the individual running the Node. Companies with large amounts of money on the Blockchain will want to run a Node as a way to protect its wealth.

The Decentralization of the Pools would help secure the Blockchain from invalid transactions and a 51% attack. More importantly it would spread out control of the Pools, between the Federal, State, and local Governments. It would also spread out the block rewards between them, and make them competitive with each other. States would strive to either pass on more block rewards to its residents or use the money to fund State infrastructure projects. It could be voted on by citizens and would truly reflect the desires of the people in that State. The needs of each State vary, therefore it is crucial to allow each State to decide what is best for its residents. Moreover if the Federal Reserve made any update to the Blockchain that State and City level Pools did not agree with, the State and City level Pools could just not run the update. The Federal Reserve with its 50 Pools would not be able to implement the update, it could choose to have its Pools run the new Blockchain, but this would cause a hard fork. This would not be ideal, however if the Federal Reserve was to add an update to the Blockchain's inflation rate, this would create more supply and lower the value of the coins on the Blockchain. If States and Cities did not approve of this inflation rate change, they could choose to not run the update and thus the people that run off that Pools version of the Blockchain would not be affected by the updated inflation rate. This would be a last resort; however the option must exist if the people of the United States are to maintain their financial freedom. To not have this option is to be subject to total Government control regarding the individual's wealth.

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