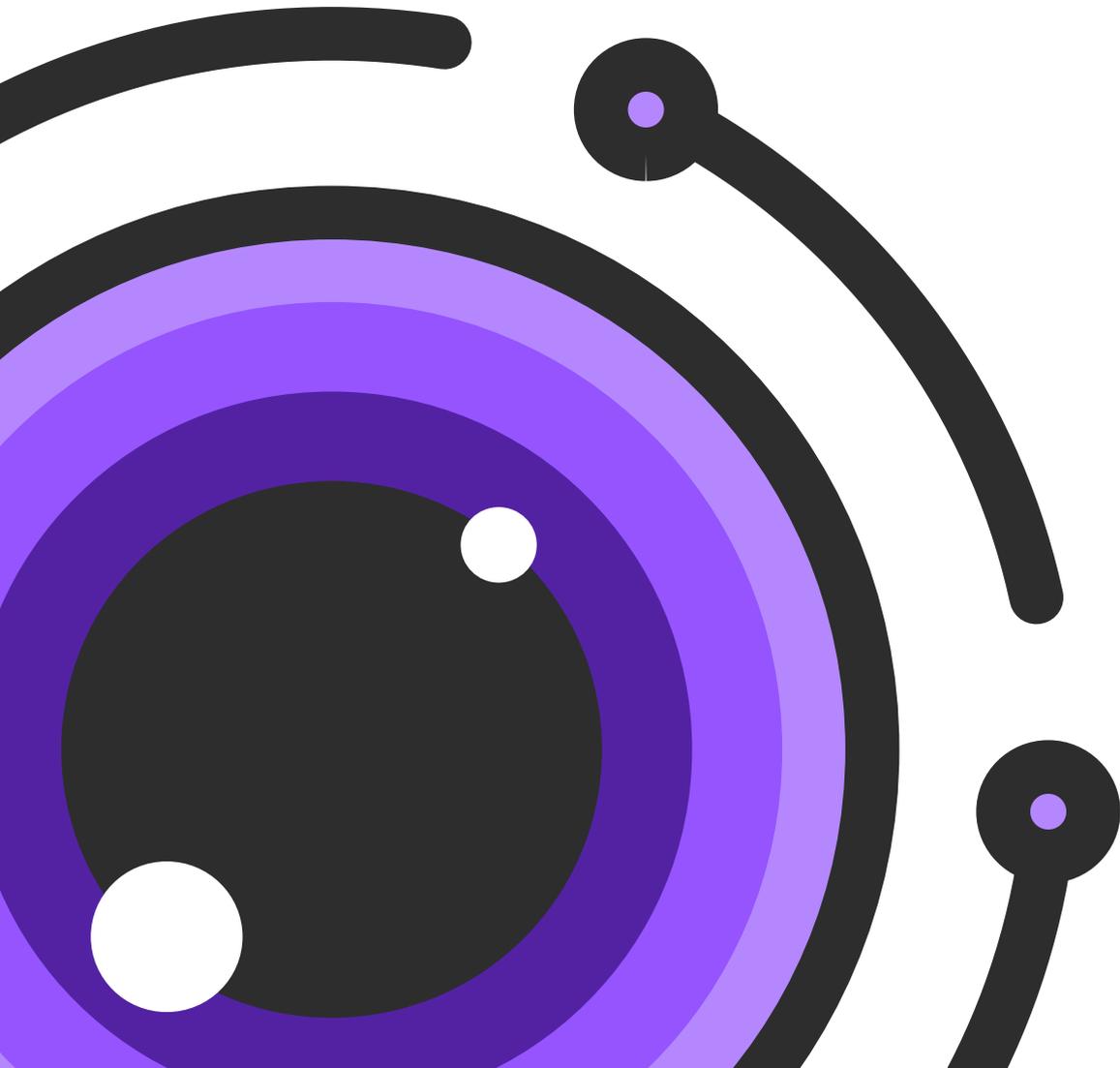


Orbicular

An Introduction to a Durable and Unique Asset Class



Abstract

A new and exciting feature for cryptocurrencies has been recently introduced and experimented upon: a time-variant supply. This new feature adds to existing currencies an extra element of flexibility and control, while also imprinting upon each a unique behavior according to the exact functions that change the supply of these currencies. There is, however, a current weakness to the way these existing currencies implement this feature. They are not durable. That is to say, while each currency has its unique functions that describe the how and why as to the mechanics of their respective, ever-changing supplies, the supply of each can tend towards zero, infinity, a state where supply no longer changes for an indefinite time, or some combination of the previous traits. Orbicular is durable in that it does not have a supply that tends to zero, infinity, a state where supply can potentially remain unchanged forever, nor a state where an explicit stopgap prevents the supply-changing function from occurring. Orbicular's changing supply will proceed to change forever, and thus the benefits that a changing supply brings with it can be trusted to continue forever.

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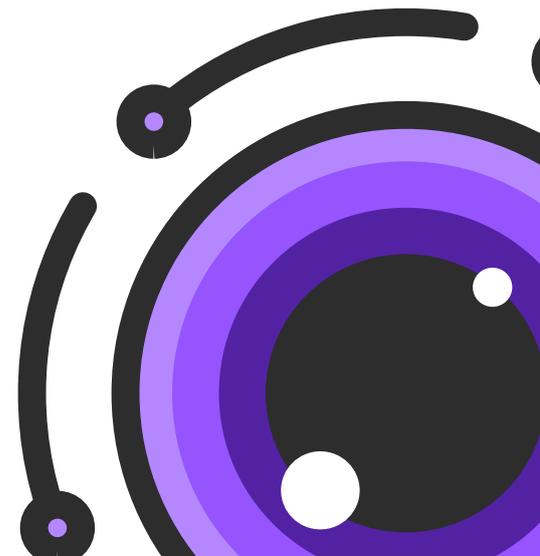
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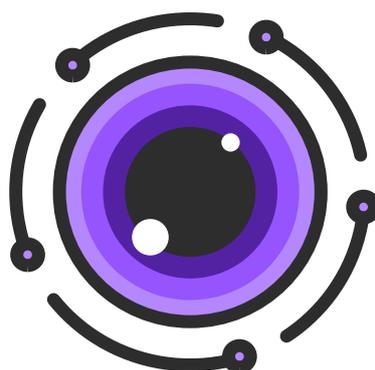


Introduction

As the cryptocurrency world evolves and grows every passing day, new ideas and mechanisms designed to intrigue, to inspire, to encourage growth, and to introduce functionality are introduced to the world. One recent addition is the idea of cryptocurrencies with time-variant, and more importantly, non-dilutive. Non-dilutive currencies are those that, in the context of cryptocurrencies with time-variant supplies, allow token holders to hold a consistent and unchanging portion of the currency's total value or market capitalization. This is in contrast to currencies that “burn” or “mint” a holder's tokens independently of other holders. When a non-dilutive currency increases or decreases its supply, the number of tokens in every token holder's wallet changes proportionally and simultaneously. If Bob holds ten tokens of a non-dilutive currency and Alice holds twenty, and that currency reduces its supply by half, Bob and Alice will find themselves holding five and ten tokens, respectively. A good and fair question to ask is **how can this be beneficial?** When one of these supply changes, commonly known as a rebase, happens, the event incentivizes trading so that the supply change is accurately reflected in the currencies price-per-unit. Bob and Alice would most likely not want to value their tokens for the same value as before a rebase event if they suddenly found themselves holding half of their initial quantity. Bob and Alice would want to value these tokens now as double what they were valued previously, to maintain a consistent value for their token. This event creates a unique opportunity similar to arbitrage that can be taken advantage of. If, for example, a token is worth \$2, and the supply of this token is doubled, the price of each token does not automatically jump to \$1 to compensate. Instead, this rebase event would create selling pressure to drive the price down to \$1 to reflect a consistent value, with those doing the selling profiting from the fact that these newly acquired tokens have a value unusually higher than what they were worth, as long as there is no underlying or fundamental change to the token's value.

What Makes Orbicular Unique?

Orbicular is unique in that the function that drives the change in supply is sinusoidal. I have not found another token, currency, good, or asset that has such a quality. Some goods have a supply that oscillates, such as agricultural goods. Oscillations in supply that have been applied inside and outside of agricultural sectors can be referred to as “hog cycles”, referencing the oscillatory nature of hog sales. Livestock that can take a long time to mature can result in swings in supply. An example is if demand for pork is high, and the prices of pork are high, ranchers may grow a surplus of livestock to “cash in” on the raised prices.



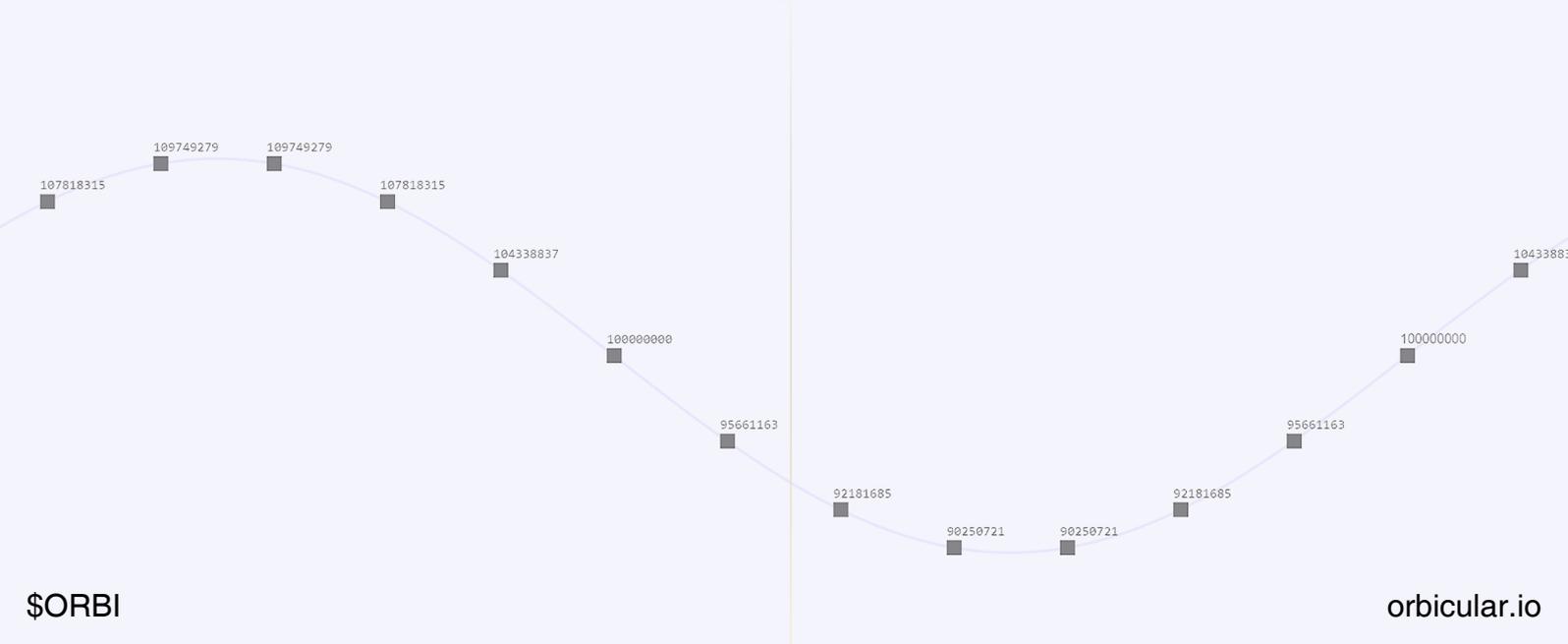
This can result in a saturation of pork in the market, leading to a price decline, with a price decline causing ranchers to perhaps grow less livestock, and thus a cycle, the hog cycle, is born. Another term for this is a market that follows the “cobweb model”, reflecting the cobweb appearance of supply and demand of a market whose supply changes with such a lag in response to demand. Orbicular, however, does not respond to changes in demand at all, unlike many supply-changing cryptocurrencies. Orbicular’s supply is dependent on a function of time that incorporates a simple sine wave. This is important because in other supply-changing currencies there is a general unpredictableness or tendency to close in on an end target, or rather a severe diminishing of the effects of supply-change events over time. Those previously mentioned arbitrage events lose potency in other cryptocurrencies as time goes on, and with it, the benefits to arbitrageurs and the unique patterns that such events generate cease to exist. Orbicular will always have a unique and predictable supply change pattern forever, and so the benefits of supply-change events will not be lost to time, and will also not result in the supply inflating to infinity, or deflating to zero, or reaching some equilibrium state in which supply-changing events do not trigger or their effects become negligible.

Rebase Function

The exact function determining the supply of Orbicular can be seen below, where t = the current UNIX timestamp in milliseconds since Jan 01, 1970:

$$100000000 + \text{floor}\left(\frac{\sin((t-1597964400000) * \frac{2\pi}{1206900000})}{10}\right) * 100000000$$

This function is called once per day at 7 PM Eastern Standard Time. The number 1597964400000 represents an offset so that the function would “start” (t minus the offset would equal zero) at 7 PM Eastern Standard Time on Aug 20, 2020, the date the token was released on Uniswap V2. The number 1206900000 represents the number of milliseconds in two weeks, indicating that the cycle “resets” once every two weeks. That is, there will be a one-week period of inflation followed by one week of deflation and vice versa. The rebase function is currently called automatically from a NodeJS program whose source can be found on the OrbicularH4H Github. The function is intended to result in Orbicular’s supply oscillating around +10% and -10% of the initial supply. A coincidental result of this function is that once a week (every Monday), the rebase function has roughly no effect on the total supply of Orbicular, therefore declaring Monday as sort of a “breather” day.



Roadmap

Orbicular has already completed a majority of its roadmap, including an overhaul to the Orbicular website, the addition and introduction of increasingly mature members to moderate and administrate Orbicular's communities, the holding of an official AMA regarding Orbicular, the addition of an AMA archive to the website, the addition of a real-time chart of the current total and circulating supply of Orbicular to the website, and the automation of Orbicular's rebase function. The future of Orbicular is close to a point where it will no longer change, due to the simplicity of its protocol. However, Orbicular serves as the first step into an exploration of durable cryptocurrencies with time-variant supplies. Once Orbicular is finalized, for the time being, new ideas will take the form of new cryptocurrencies that can also be considered as having a time-variant supply as well as durability. I do have plans already for the next addition to this ecosystem, which will involve a pair of inversely related tokens similar to Orbicular. These new currencies can serve as a unique asset class of even more unique, ever-lasting commodities that can allow investors and speculators to diversify into differently behaving functions of supply. Concurrently, priorities can be shifted from developing Orbicular to the refinement and growth of Orbicular's website and various communities.

Token Distribution

Orbicular was released with a total supply of 100,000,000 tokens. 90 million tokens were initially put into the liquidity pool and locked using Unicrypt for 6 months (lock will expire in Feb of 2021). Due to high community demand to lock the remainder of tokens to ensure that no "rugpull" (a common term for a token's developer or team swapping their large number of tokens for a different currency for market value all at once and then abandoning the project) can occur. The price of each Orbicular token rose at a staggering pace initially, and I was unable to lock the remainder of my tokens held. So, to pacify the community and prove my seriousness about the token's development I proceeded to lock up what remaining Orbicular I had in the Uniswap V2 liquidity pool that I could afford and burned the remainder (8,764,793.167624183) of my tokens by sending them to a 0x00...01 address. Prior to the burn and lock, 1 million tokens were distributed (500,000 each) to the two administrators who had initially offered to assist with the growth and initial creation of Orbicular's communities. I had made sure that this number of tokens was not enough to change the price of Orbicular at the time by more than 1% even if all tokens awarded were market dumped simultaneously. I do hold some, fewer than 200,000 tokens currently, as the community later realized that it may be beneficial to hold some tokens in order to afford marketing and exchange fees to promote the growth of Orbicular. This number of tokens (as of now, Aug 28, 2020) cannot change the price of an Orbicular token by more than 1%.



ORBI Contract:- 0x11a2ab94ade17e96197c78f9d5f057332a19a0b9



Locked Liquidity:- 0x840336E57708B8Ba1E864B2b7dB78AAbEEba1691

Afterthoughts

It had occurred to me after the creation of the token that its durability may result in some rather interesting game theory mechanics. When Orbicular was being tested to make sure that it would function as promised, I realized at least some of the extent to how rebases might be valuable to traders, arbitrageurs, and liquidity holders alike. When an arbitrageur trades around a rebase event, the money that they gain is not created out of thin air, after all, there is no such thing as a free lunch. This value that arbitrageurs can acquire comes from the value held by liquidity holders. Liquidity holders can experience an effect known as “impermanent loss” that can negatively affect the value of their holdings when the value of their underlying tokens suddenly changes. This is not entirely to the dismay of liquidity holders, however. Arbitrageurs cannot take significant advantage to this effect as doing so (at the time of writing) to try and acquire a large sum of value would incur high slippage through the Uniswap V2 platform, which can be front-run by others or automated scripts, essentially “stealing” that value from the arbitrageurs. Additionally, the sinusoidal and publicly available nature of Orbicular’s rebase function allows traders to “know” to an extent when arbitrageurs may attempt to take advantage of these events, and they can then take advantage of the arbitrageurs by being able to predict when the demand to buy and sell can occur. This has an interesting effect in that the potential increase in trading due to the potential predictability of arbitrageurs can provide additional fees to those holding liquidity. There would then exist a sort of “three-way chase” for value between liquidity holders, arbitrageurs, and traders that could, in theory, drive the volume and demand of the token ensuring that it holds some value. It would be interesting to see how this game theory (or other game theories) could play out in such a unique environment that Orbicular creates.

The word "Orbicular" is written in a blue, sans-serif font. The background features a large, stylized graphic of a black arc with a purple circle at its end, and a purple arc below it. The overall design is modern and tech-oriented.

Orbicular

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