

USD Wiki Token: The First System of Digital Commemorative Coin v1.0

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Abstract

The Bretton Woods Conference of 1944 established the International Monetary Fund (IMF) and an international exchange rate system based on the gold standard, positioning the US dollar as the world's primary reserve currency. Despite the collapse of this system in 1971, the dollar remains central to global finance. The 2008 financial crisis led to the emergence of Bitcoin, a decentralized digital currency that introduced blockchain technology to the world. Since the inception of Bitcoin, numerous forms of cryptocurrencies have been launched, including altcoins, stablecoins, memecoins, and CBDCs. But, It is thought to be the time to develop a new system of cryptocurrency that blends the existing financial system to commemorate the 80th anniversary of the Bretton Woods Conference.

1 Introduction

The digital commemorative coin (DCC) represents a novel concept that fuses historical commemoration with modern technology. Traditional commemorative coins honor significant events, figures, or themes and are valued for their material and symbolic significance. The USD Wiki token, created to honor the 80th anniversary of the Bretton Woods Conference, integrates historical significance with innovative cryptocurrency technology, exemplifying this new concept. This whitepaper introduces the USD Wiki token while explaining the concept of DCC.

2 Digital Commemorative Coin

2.1 Issuance

A digital commemorative coin must be issued on a significant anniversary to commemorate a particular event, person, place, or theme, and eschews internet memes or humor, maintaining the integrity and commemorative purpose.

The United States Dollar Wiki Token (hereinafter referred to as the USD Wiki token or USD Wiki) was created to honor the 80th anniversary of the Bretton Woods Conference, based on detailed Wikipedia documents. The USD Wiki token was issued on July 22, 2024, as an ERC-20 contract, the closing date of the Bretton Woods Conference. The various resources of Wikipedia have played a crucial role in the development of this token.

2.2 Circulation

Similar to traditional circulating commemorative coins, digital commemorative coins should have an appropriate issuance volume that strikes a balance between scarcity and availability. Historical examples of commemorative coin issuance inform this balance.

The total issuance of USD Wiki tokens is 35,000,000, commemorating the fact that 1 ounce of gold was worth 35 dollars under the Bretton Woods System, and mirroring the issuance quantity of the first 2 euro commemorative coin series, which was also 35,000,000.

2.3 Guarantee

Traditional commemorative coins have a dual price system where their value is guaranteed by the central bank at face value but can trade higher in the market due to their material and symbolic significance.

In the absence of a central bank for cryptocurrencies, the value guarantee of the digital commemorative coins is replaced by the issuer's guarantee, similar to the nature of stablecoins. This approach ensures that the token maintains its value while allowing for market-driven price variations. Considering this, 1 million USD Wiki tokens are equivalent to 1 USD, with this value fixed.

3 Tokenomics

This section delves deeper into the impact of digital commemorative coins (DCCs) issuance by government or foundation on the money supply and inflation, presenting a systematic expression through mathematical models.

3.0.1 Extended Model of the basic relationship

The basic relationship according to the Quantity Theory of Money is given as follows:

$$MV = PY$$

Here, M represents the money supply, V the velocity of money, P the price level, and Y the real GDP. Considering that the velocity of money, V , can change over time due to advancement of blockchain technology and financial policies, V is set as a function varying over time:

$$V(t) = V_0 e^{-kt}$$

where k is a constant representing the rate of decrease in velocity, and V_0 is the initial velocity.

3.0.2 Model of Adjustment through DCCs Issuance

To model the reduction in money supply M due to the issuance of digital commemorative coins, the following continuous money reduction function is set:

$$M'(t) = M_0 - \int_0^t C(s) ds$$

where M_0 is the initial money supply before the issuance of digital commemorative coins, and $C(s)$ represents the issuance of digital commemorative coins at time s . Assuming that the issuance amount can vary over time, it can be adjusted according to economic conditions, policy objectives, and inflation forecasts.

3.0.3 Impact of DCCs on Inflation

Now combining the two models to analyze the impact of money supply on inflation:

$$(M_0 - \int_0^t C(s) ds)V_0 e^{-kt} = P(t)Y(t)$$

The inflation rate $\pi(t)$ is defined as the rate of change in the price level $P(t)$:

$$\pi(t) = \frac{dP}{dt} / P(t)$$

Now differentiating the equation for the price level, the inflation rate can be expressed as follows:

$$\frac{dP}{dt} = \frac{d}{dt} \left(\frac{(M_0 - \int_0^t C(s) ds) V_0 e^{-kt}}{Y(t)} \right)$$

Solving this equation to calculate the inflation rate can be quite complex and may require numerical methods under certain assumptions.

3.0.4 Determining the Optimal Issuance of DCCs

To evaluate how the issuance of digital commemorative coins can contribute to the overall economy, including inflation, the necessary condition for determining the optimal issuance amount C^* is set as follows:

$$\min_{C(t)} |\pi^* - \pi(t)|$$

Here, π^* is the target inflation rate. This optimization problem serves as one of the policy tools available to monetary policymakers, allowing them to develop specific strategies through simulations and predictive models.

4 Conclusion

The USD Wiki token could be the first and new alternative form of cryptocurrency in terms of altcoins. The issuance of this token will be appropriately distributed among central banks, institutions, and individuals of various countries.

5 Disclaimer

The information provided in this whitepaper is for informational purposes only and does not constitute financial, investment, or other professional advice. Potential investors should conduct their own research and consult with a financial advisor before making any investment decisions.

This whitepaper is a draft and may be reviewed and revised through various consultations in the future. The official version of this whitepaper is published in English and Japanese, and translations can be freely made.

References

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