

# JPYCoin (JPYC)WhitePaper

ERC20 token as Prepaid Payment Instruments for Own Business

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## Summary

In this paper, we are going to propose a JPY-pegged stablecoin, legally dealt as a Prepaid Payment Instrument in Japan. Starting from Bitcoin and Ethereum, there are thousands of rising payment methods via cryptocurrencies leveraged by blockchain technology from around the 2010s, but large fluctuating prices have been the cause of difficulty in buying and selling goods. From this point of view, several projects appeared featuring USD-pegged stablecoins with fiat money and cryptocurrencies used as collaterals. As opposed to that, JPY-pegged stablecoins have been far from practical use.

JPYCoin (hereinafter referred to as JPYC), will expand the target of customers compared to ICB, which is for business use only, and streamline the cryptocurrency payment in buying and selling goods, for the public use as a Prepaid Payment Instrument.

## 1. Introduction

### 1.1. Problems with Crypto Assets

Ever since Bitcoin was born in 2008, blockchain-utilized payment systems have been controversial and experimented all over the world. Nevertheless, because of the large price fluctuation, they are still considered difficult to spread as a common use. The value of the Japanese Yen in dollars fluctuated by about 5% between early 2020 and 2021. On the one hand, the

Bitcoin value in dollars fluctuated by about 400% within the same period, which is definitely a big obstacle as a general payment method.

## 1.2. Ongoing Stablecoins Designed to Achieve the Stable Price

As mentioned above, in order to introduce the payment method with blockchain for the purpose of the smooth payment, it's difficult to use the unstable cryptocurrency such as Bitcoin for the general use. In light of that, we invented and issued a JPY-pegged stablecoin as a Prepaid Payment Instrument.

On the blockchain platform, there are three kinds of stablecoins; ( i ) stablecoins collateralized by fiat money, ( ii ) stablecoins collateralized by cryptocurrency, and ( iii ) stablecoins with no collateral.

## 1.3. Problems with the Ongoing Stablecoins Designed to Achieve the Stable Price

Stablecoins backed by fiat money or cryptocurrency is spreading in the market, but there are several problems. As an example, USDT is one of the famous stablecoins collateralized by fiat money, with the possibility that the issuer, Tether, might use it in a fraudulent way. As regards to the stablecoins backed by cryptocurrency, the representative example would be DAI issued by MakerDAO, which still has a capital efficiency issue that DAI is mainly made up of ETH overcollateralization.

Moreover, the ongoing stablecoins designed to achieve the stable price are basically pegged to USD, and it leaves the inconvenience within Japan, because they are impossible to pay in JPY based price. As of January 2021, ICB we provide is the only ERC20 stablecoins pegged to the Japanese Yen as a Prepaid Payment Instrument in Japan.

#### 1.4. Problems with the Users who Already Have Cryptocurrency

There are a few problems when people who have some cryptocurrencies want to exchange them for goods and service experiences.

First of all, they have to go through a cryptocurrency exchange to have access to services with cryptocurrency, and pay high fees for the Japanese Yen there. Furthermore, it takes a long time for them to achieve the whole process of the payment for a service; they are supposed to exchange cryptocurrency to Japanese Yen, complete the deposit into their account. These are also the huge part of the obstacles of cryptocurrency's distribution as a payment method.

#### 1.5. Problems with the Users who Start Using Cryptocurrency

There are many ways to hold cryptocurrency in Japan, but they contain several problems respectively. One typical case is mining and currently plenty of companies are mining by spending a huge amount of costs on equipment investment, thus for the most individual it's not an exaggeration to say there is no spot, as of January 2021.

Besides, purchase at cryptocurrency brokers and exchanges includes several matters. For instance, the users are forced to wait for the process of KYC and in the period they cannot buy and sell. In addition, they cannot be evaluated as a proper way to trade in markets open 24 hours a day, due to the frequent system maintenance. Moreover, some exchanges' fees are so high that the users have a heavy burden, which is obviously a problem.

#### 1.6. Problems with ICB and Customer Support

ICB is for the business use, thus only business operators can purchase. This is why we cannot fulfill lots of individuals' needs who requested purchasing. Now everyone can get JPYC.

ICB was also exempted from the Payment Services Act, thus there's no requirement of deposit under the law. JPYC is designed to be deposited in accordance with the law, placing more emphasis on user protection than ICB.

## 2. Specifics of JPYC

### 2.1. About price maintenance mechanism

JPYC is a Prepaid Payment Instrument and basically 1 JPYC is equal to 1 Yen. Through the price maintenance mechanism, users are released from the payment method leveraged by blockchain with the traditional price fluctuation risk, and able to use as a payment for the procurement of goods. Below are the mechanisms to support the users' healthy economic activities.

#### 2.1.1. When 1 JPYC < 1 Yen (under 1 Yen)

When the price of 1 JPYC is continuously under 1 Yen on average for a long time period at decentralized exchanges like Uniswap, the issuer tries to increase the secondary distribution price, by depositing to the Legal Affairs Bureau more than the amount required by the Payment Services Act, more than 50% of Unused Base Date Balance, or receiving a financial institution guarantee as required by the law. At the moment, we deposit 200% of the amount under the law and 10 million Yen to the authority. Once the deposit sum is increased, we will notice after the deposit via our website or other media.

Thereby, if we should go bankrupt, bankruptcy remoteness is still effective, which is why we think we can protect the rights of JPYC users, but we cannot guarantee the principal.

#### 2.1.2. 1 When JPYC > 1 Yen (over 1 Yen)

When the secondary distribution price of 1 JPYC is over 1 Yen, we believe the price will be stable approaching 1 Yen by our continuous selling at a ratio of 1 JPYC to 1 Yen.

Besides, regardless of above when the average price of the secondary distribution has been over 1 Yen for a long time and we deposited over the amount required by the Payment Services Act (hereinafter referred to as excessive deposit, including financial institution guarantee), in order to prevent the decrease in capital efficiency due the excessive deposit, the portion of the deposit might be withdrawn, the amount determined by us that the average secondary market price is not less than 1 Yen within a range of 30% or less.

#### 2.1.3. When the large parts of initially issued JPYC is distributed in the market

We will 100 million JPYC initially, but there might be some possibility that that amount of JPYC cannot meet the market needs because of the increasing JPYC needs. After the predetermined percentage of JPYC has been supplied to the market, we will proceed to the next phase and additional JPYC will be issued to maintain the appropriate amount of JPYC to meet demand. More details will be provided later in 2.4.

#### 2.1.4. When the issuer stopped issuing operation

Payment Services Act requires a refund when the issuer discontinues the issuing operation. The users can get a refund from us at a ratio of 1 JPYC to 1 Yen.

### 2.1.5. When the issuer goes bankrupt

When the issuer goes bankrupt, JPYC becomes unusable, but the balance held by the user continues to be recorded on the Ethereum blockchain. The procedure for repaying money to users in bankruptcy proceedings is to be followed.

#### **Deposit of Security Deposit for Issuance**

Under the Payment Services Act, Issuers of Prepaid Payment Instruments for Own Business with the Unused Base Date Balance of 10 million Yen are mandatory to deposit and protect the users with the Legal Affairs Bureau an amount equivalent to at least one-half of the Unused Base Date Balance. When the issuers go bankrupt, deposit of security deposit for issuance will be refunded, which is called Refund Procedure. The users are entitled to priority reimbursement (share) from the deposit of security deposit for issuance according to the procedure.

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## 2.2. Legal Position of JPYC

JPYC is one of the Prepaid Payment Instruments for Own Business issued by a company under the Japanese laws. JPYC is a currency-denominated asset so it is not a cryptocurrency legally. These days the market of the so-called DeFi (Decentralized Finance) is rapidly expanding, and there is a DEX (Decentralized Exchange, no middleman exchanges) in the market, one of the most famous being Uniswap. JPYC holders are able to manage assets using such tools.

### 2.2.2. Items that cannot be purchased by proxy with JPYC

JPYC is one of the Prepaid Payment Instruments for Own Business under the Japanese laws. Products that require sales permits, certifications, or licenses may not be available for purchase by proxy. ex. Some foods, alcoholic beverages, medicines, pets, and other items whose resale is restricted by the law.

## 2.3. Utility

2.3.1. Items can be purchased by proxy on E-commerce websites such as Amazon from our website in a ratio of 1 JPYC to 1 Yen.

JPYC is purchasable with BTC, ETH, JPY and it is usable on purchasing by proxy on E-commerce websites such as Amazon from our website in a ratio of 1 JPYC to 1 Yen, regardless of the secondary distribution price.

2.3.2. Various DeFi on Ethereum is available

JPYC is a ERC20 token, so different kinds of DeFi on Ethereum are usable with JPYC. For instance, one can lend JPYC through decentralized lending protocol, Compound.

For your information, the use of DeFi is at the sole discretion and risk of each user, and we are not responsible for any damages caused by the use of DeFi. Please be aware of this in advance.

## 2.4. Issuance amount of JPYC

We are going to increase the issuance amount of JPYC gradually.

1. JPYC 1 issuance limit 100 millionJPYC
2. JPYC 2 issuance limit 1 billion JPYC
3. JPYC 3 issuance limit 10 billion JPYC
4. JPYC 4 issuance limit 100 billion JPYC

5. JPYC 5 issuance limit 1 trillion JPYC
6. JPYC 6 issuance limit 10 trillion JPYC
7. JPYC 7 issuance limit 100 trillion JPYC

The mechanism of JPYC issuance and distribution is as follows. First, when more than 90% of JPYC (10 million JPYC) is distributed externally, JPYC2 will be issued and then when more than 90% of JPYC2 is distributed externally, JPYC3 will be issued, and so on.

JPYC is a mintable ERC20 token, so there will be no change in the contract address on additional issuance.

## 2.5. About JPYC Incentive Provision Program (JIP)

JPYC Incentive Provision Program (hereinafter referred to as JIP) a program that people who provide JPYC liquidity on decentralized exchanged (hereinafter referred to as DEX) such as Uniswap can receive rewards depending on the provision quantity and period. The rewards can be received with USDC. To enjoy JIP, one is supposed to provide liquidity of more than 50,000 JPYC continuously during the specified period. JIP also depends on the phase as below.

- phase 1: until JPYC total amount on DEX hits 50 million Yen
- phase 2: from the end of phase 1, until the JPYC total amount on DEX hits 250 million Yen
- phase 3: from the end of phase 2, until the JPYC total amount on DEX hits 500 million Yen
- phase 4: from the end of phase 3, until the JPYC total amount on DEX hits 2.5 billion Yen
- phase 5: from the end of phase 4, until the JPYC total amount on DEX hits 5 billion Yen

Notice: Each phase will transition automatically depending on the JPYC total amount of DEX. On transition announcements will be made.

The incentive reward for each phase is a percentage of the amount of JPYC when liquidity is provided, and can be received annually as shown in the table below.

	Continued for 1 year	Continued for 2 year	Continued for 3 year	Continued for 4 year	Continued for 5 year
phase 1	10%	8%	6%	4%	2%
phase 2	8%	6%	4%	2%	-
phase 3	6%	4%	2%	-	-
phase 4	4%	2%	-	-	-
phase 5	2%	-	-	-	-

See [“What is JPYC Incentive Provision Program”](#) for the details about Incentive Program

### 3. Use Case

#### 3.1. Use Case 1 “Payment on Goods by Cryptocurrency Holder”

The users holding cryptocurrency can purchase items in a ratio of 1 JPYC to 1 Yen by relying on us, about purchasing by proxy on E-commerce websites such as Amazon when they want to buy something there and use cryptocurrency.

Concerning the purchase method of JPYC, please read “6. how to purchase JPYC”.

#### 3.2. Use Case 2 “Users who is going to Hold Cryptocurrency”

JPYC users are able to manage assets, exchange JPYC for ERC tokens provided as liquidity on DEX Uniswap along with ETH and JPYC on their own authority and at their own risk.

### 3.3. Use Case 3 “Use of Decentralized Exchanges”

JPYC users provide liquidity on a decentralized exchange Uniswap on their own authority and at their own risk.

When JPYC liquidity is provided, people can exchange (swap) JPYC for ETH and all the other ERC20 tokens that can be traded on Uniswap without the issuers' approval. The more JPYC is used for swap on Uniswap, the more JPYC, ETH or other ERC20 tokens liquidity providers can get as rewards.

### 3.4. Use Case 4 “Use of Decentralized Lending Protocol”

JPYC is a ERC20 token, which means technologically all the DeFi using ERC20 tokens are available with JPYC. For example, one can lend JPYC through decentralized lending protocol, Compound at his or her sole discretion and risk. As of January 2021 JPYC is not traded in Compound, but once the Compound community approves of handling of JPYC, everyone can lend JPYC and get yield, or lend JPYC by paying yield. It's up to the decision of the Compound community but as a reward contributing to Compound through these loans, you may also receive Compound governance token, COMP.

### 3.5. Use Case 5 “Arbitration by DeFi Users”

JPYC is a ERC20 token, so JPYC holders can use all the DeFi based on ERC20 tokens. DeFi is a developing market, thus there is a tendency for temporary price differences in products with the same value to occur. In such a case, people can choose arbitrage trading as a way to earn profits by selling the overvalued one and buying the undervalued one, and then buying or selling the opposite one when the

price difference between the two narrows, under their own authority and responsibility.

### 3.6. Use Case 6 “Buying goods of crypto artists”

JPYC is technologically usable as all the other ERC20 tokens. Buying goods by crypto artists who issue NFT (Non-fungible token) and conduct sales could happen, by swapping and getting JPYC such as on Uniswap.

## 4. JPYC Governance

Important matters related to the issuance and circulation of JPYC to be sold are decided based on the discussions among the issuer’s directors, regular employees, and experts on the advisory board. The advisory board includes lawyers, venture capitalists, international tax accountants, former CFOs of listed companies, blockchain company executives, consultants, and others, who share their expertise with the entire team.

## 5. About the Issuer

### 5.1. Team

Okabe CEO  
Harasawa COO  
Ono Software Engineer  
Ito Software Engineer

### 5.2. Advisor

Kazutaka Muraguchi Venture Capitalist

Kazutaka Mori International Lawyer

Dai Mizui Lawyer

Kenji Yanagisawa International Tax Accountant

Yoshitaka Sasaki former CFO of a listed company

Hironori Ido Certified Public Accountant, Tax Accountant

### 5.3. Company Information

Founded : November, 2019

Address : Nekoraibo, Shibakoen, Minato-city, Tokyo

Capital : 26,531,250 yen

Services : antique dealer, management of antique market, issuance of Prepaid Payment Instruments

Licenses :

Antique Dealer License Number at Tokyo Metropolitan Public Safety Commission: 304372004277

Antique Market Owner Licence Number at Tokyo Metropolitan Public Safety Commission: 304372004710

## 6. How to Purchase JPYC

### 6.1. Recommended Purchase Methods

Purchase methods the issuer recommends are threefold as follows.

1. purchase with Japanese Yen through the issuer's website
2. purchase with ETH through the issuer's website
3. purchase with BTC through the issuer's website

By making a payment through the issuer's website using any of the above methods, one can purchase at a ratio of 1 JPYC to 1 Yen.

However, in the case of continuous trading at a much higher or lower price on Uniswap, we may temporarily suspend the sale until we identify the cause.

## 6.2. Other Purchase Methods

Buying JPYC via decentralized exchanges with other ERC20 tokens is possible, such as on Uniswap. However, there are always price fluctuations and we have no alliances with these exchanges at all, so in such cases one should take care of all, under your own authority and responsibility.

## 6.3. Possible Purchase Methods in the Future

The issuer plans to make it possible to purchase JPYC with the currency that it plans to deal with

# 6. Audit Result of Issuing Contract TECHFUND

**TECHFUND Audit Score**  
Smart contract Audit Report

### JPYC

Completed on 2021-01-21

Score **POSITIVE** (5.0 / 5.0)

Risk level	Critical	0
	High	0
	Medium	0
	Low	0
	Note	3

#### Risk level detail

		Overall Risk Severity			
Impact	HIGH	Medium	High	Critical	
	MEDIUM	Low	Medium	High	
	LOW	Note	Low	Medium	
		LOW	MEDIUM	HIGH	
		Likelihood			

The tester arrives at the likelihood and impact estimates, they can now combine them to get a final severity rating for this risk. Note that if they have good business impact information, they should use that instead of the technical impact information.  
[https://owasp.org/www-community/OWASP\\_Risk\\_Rating\\_Methodology](https://owasp.org/www-community/OWASP_Risk_Rating_Methodology)

### Vulnerability Review

Number of warnings

Compiler Version	1
Smart Contract Calls	1
ERC20 Approve vulnerability	1
Integer Underflow	0
Integer Overflow	0
Parity Multisig Bug	0
Callstack Depth Attack	0
Transaction-Ordering Dependency	0
Timestamp Dependency	0
Re-Entrancy	0
Double Withdrawal	0



### Compiler

It is suggested to use particular version as there might be changes in future versions of a compiler which cannot be checked for now and might lead to breaking changes in deployed smart contract.

### Smart Contract

```
function isContract(address account) internal view returns (bool) {  
    // This method relies in extcodesize, which returns 0 for contracts in  
    // construction, since the code is only stored at the end of the  
    // constructor execution.  
  
    uint256 size;  
    // solhint-disable-next-line no-inline-assembly  
    assembly { size := extcodesize(account) }  
    return size > 0;  
}
```

Generally do not use the EXTCODESIZE check to prevent smart contracts from calling a function. This is not foolproof, it can be subverted by a constructor call, due to the fact that while the constructor is running, EXTCODESIZE for that address returns 0.

### ERC20 Approve vulnerability

Someone already approved can acquire extra allowance when a token holder changes the allowance for him/her.

Here is possible attack scenario:

- 1) Alice allows Bob to transfer N of Alice's tokens (N>0) by calling approve method on Token smart contract passing Bob's address and N as method arguments. After some time,
- 2) Alice decides to change from N to M (M>0) the number of Alice's tokens Bob is allowed to transfer, so she calls approve method again, this time passing Bob's address and M as method arguments
- 3) Bob notices Alice's second transaction before it was mined and quickly sends another transaction that calls **transferFrom** method to transfer N Alice's tokens somewhere
- 4) If Bob's transaction will be executed before Alice's transaction, then Bob will successfully transfer N Alice's tokens and will gain an ability to transfer another M tokens
- 5) Before Alice noticed that something went wrong, Bob calls **transferFrom** method again, this time to transfer M Alice's tokens.

So, Alice's attempt to change Bob's allowance from N to M (N>0 and M>0) made it possible for Bob to transfer N+M of Alice's tokens, while Alice never wanted to allow so many of her tokens to be transferred by Bob.

## 7. Disclaimer

Please be aware of and acknowledge the following risks before using JPYC. JPYC shall not be liable for any loss or damage arising from or in connection with any of the following risks.

### 7.1. Risk about Financial Value of JPYC itself

JPYC is not issued as securities, financial instruments, or any other investment products under the Financial Instruments and Exchange Law, nor is it a cryptocurrency under the Payment Services Act, but a currency issued as one of the Prepaid Payment Instruments for Own Business. Therefore, it is not guaranteed that it can be used for any purposes we haven't specified, and it cannot be used for settlement between users.

Furthermore, since JPYC is issued in accordance with the ERC20 standard, it is possible to dispose of JPYC on certain external services that accept the ERC20 standard, but we do not recommend or guarantee this. JPYC users are required to use external services under their own authority and responsibility.

## 7.2. Risk of Losing JPYC due to the Loss of Private Key

Private key itself or a combination of private keys is required for the disposal of the users' JPYC, and the management of the private key shall be under their own authority and responsibility.

The loss of the private key associated with the wallet where the user's JPYC is stored means the loss of the JPYC itself.

Besides, loss of JPYC may be caused by phishing attacks, malware attacks, DoS attacks, consensus-based attacks, or other various types of attacks.

## 7.3. Risk associated with Ethereum Protocol

JPYC is based on Ethereum protocol ERC20, any Ethereum protocol malfunctions may cause serious effect to JPYC, and there might be some possibilities that JPYC cannot be used temporarily in such cases. Additionally, it requires transaction fees (gas fees) to use JPYC and transfer money on the Ethereum network, but the fees might skyrocket because of the cause we are not related to, like the congestion of Ethereum network.

## 7.4. Risk of Mining Attacks

JPYC is, as well as the other decentralized cryptocurrencies based on the public blockchain protocols, may be subject to attacks by mining during the verification of the transaction. These attacks may pose a risk to transaction records regarding JPYC.

#### 7.5. Risk of Change in Laws and Regulations, Risk of Taxation

JPYC is subject to future changes in laws, ordinances, guidelines, and other regulation or taxation systems related to JPYC. In addition, users shall make decisions as regards the necessity of filing tax returns and other taxation related JPYC under their own authority and responsibility.

#### 7.6. Risk due to Input Errors by Users and Other Factors

There may be a risk of unintended transaction results due to input errors or other actions caused by the user, malfunctions or operating conditions of the user's or a third party's communication or system equipment, natural disasters, cyber attacks, or any other cause.

#### 7.7. Relationships between Users

Any transactions, communications, disputes, etc., that arise between users and other users or third parties in connection with our website shall be handled and resolved under the users' own responsibility, and we shall not be responsible for such matters.

#### 7.8. Risk associated with the Issuance or Suspension of JPYC Circulation

We shall not be liable for any damages incurred by the user about the suspension, termination, or modification of the issuance or distribution of JPYC, deletion or loss of the users' messages or information, cancellation of the users' registration, loss of data due use of the service, or malfunction or damage to equipment, or any other matters.

## 8. **Supplementary Provisions**

1. This white paper is prepared and released on January 26, 2021.