Proceedings of the 5th International Conference on Financial Technology and Business Analysis (ICFTBA 2026)
DOI: 10.54254/2754-1169/2026.39368

The Development Opportunities and Regulatory Path of Legal Digital Currency and Compliant Stable Currency in Cross-Border Payment System

Aoran Zhang

Huhhot No.1 High School, Huhhot, China
aoran0911@gmail.com

Abstract. With the continuous expansion of the scale of cross-border economic and trade activities, the traditional Society for Worldwide Interbank Financial Telecommunication (SWIFT) cross-border payment system is restricted by the correspondent bank model, which has realistic pain points such as long clearing chain, high transaction cost and inconsistent regulatory standards in various countries. This paper takes the development opportunity and supervision path of legal digital currency and compliant stable currency in the cross-border payment system as the research theme and combined the current development status of cross-border payment market. It is found that the statutory digital currency can reduce the transit level, strengthen the traceability of transactions, and help fill the shortcomings of financial infrastructure in emerging markets. The compliant and stable currency is suitable for small-scale cross-border trade and personal cross-border settlement scenarios and can also empower Real-World Assets (RWA)'s real asset token business. Based on this, this paper refers to the overseas rules such as Markets in Crypto-Assets Regulation (MiCA) of the European Union and puts forward a targeted supervision scheme from the dimensions of reserve management, redemption rights, Know Your Transaction-Anti-Money Laundering (KYT-AML) compliance and license access. The research can provide theoretical reference for improving the governance of cross-border digital payment and promoting the standardized development of real assets token.

Keywords: Legal digital currency, compliant stable currency, cross-border payment system

1. Introduction

With the increasing demand of the global financial system, the traditional cross-border payment system has complicated transaction process, high cost and long settlement cycle, and the geopolitical fragmentation of furniture and the rising uncertainty of the global financial system, digital currency is accelerating to become a brand-new solution in the cross-border digital payment system [1]. At the same time, whether the stable currency can replace the SWIFT message network system has become a realistic problem worthy of discussion in the field of cross-border digital financial payment [2]. At the same time, with the promotion of cross-border digital payment interconnection, it is also inseparable from the complex international political cooperation between countries [3]. The

© 2026 The Authors. This is an open access article distributed under the terms of the Creative Commons Attribution License 4.0 (https://creativecommons.org/licenses/by/4.0/).

DOI: 10.54254/2754-1169/2026.39368

construction of digital infrastructure will also improve the adaptability of banks in the face of the impact of cryptocurrency and will also have a global impact on them [4]. At present, cryptocurrency has also begun to be used in e-commerce scenarios, but it still faces realistic global challenges in the integration of online stores and payment service providers [5]. Compliance stable currency not only enhances financial inclusion but also has great potential in improving the efficiency of payment system, but at the same time, it needs to achieve a better balance between privacy protection and compliance supervision [6]. Because payment belongs to the field of strong supervision, simply changing the bottom payment track will not eliminate the compliance obligation [7]. There is a lot of literature focusing on the practice and implementation of digital currency, the central bank, but there is still some room for research on its cross-border dimension [8]. Part of Poland's conversion bill belongs to regulatory gold plating. Although it raises the compliance cost, it does not bring corresponding benefits. At the same time, there are some important regulatory gaps. Paradoxically, the existing rules may hinder the development and market competitiveness of non-euro zone member countries' local currency pegged to stable currency [9]. At the same time, the privacy technology under the compliance framework can effectively solve the privacy leakage problem of RWA's real assets token and stable currency circulation, and at the same time, it can keep the value of assets winding, cross-border circulation and revitalize the real economy, which meets the global compliance regulatory requirements and greatly improves the feasibility of RWA and stable currency in real life and commercial application scenarios [10]. Based on this, this paper focuses on the application and future development of legal digital currency and cross-border payment with compliant and stable currency and focuses on its development opportunities and regulatory paths.

2. The current reality of global cross-border payment system

2.1. The existing pain points of the traditional cross-border payment system

There are too many levels of intermediate chain in the correspondent bank model, which directly leads to the inefficiency of cross-border liquidation. Located in different countries and regions

Most banks don't have cross-border agency accounts that are directly opened to each other, so cross-border transactions are generally delivered through SWIFT network, and capital settlement still relies on the agency banking system. During the transaction, after the payer submits the payment information to his own bank, the bank will conduct a preliminary review of anti-money laundering between KYC and AML. After the review is passed, the bank will generate a SWIFT message, which includes the payer's account information, related transaction information and payee's information. After the message enters the SWIFT network, if the paying bank and the receiving bank do not open agency accounts with each other and there is no direct account relationship, if the payment is requested, It will go through the intermediary agent bank first, and after the intermediary agent bank receives the relevant transaction request, it will conduct internal risk review on the transaction, and after bookkeeping in the internal account, it will generate a new message and send it to the target transaction payee bank. However, this transaction may go through one or more transitions at the same time, with too many chain levels and too long review time, which may cause delays and additional deductions. After going through the multi-layer chain, the cross-border cost will be too high, and it is not friendly to small cross-border transactions. If the internal audit time is too long or the holiday time of changing jobs in the middle school will lead to too long remittance arrival time and low efficiency.

At the same time, the preliminary KYC and AML compliance audit of cross-border transactions is completed by remittance banks, but there are differences in financial supervision laws and

DOI: 10.54254/2754-1169/2026.39368

regulations in different countries and regions, resulting in uneven transparency of cross-border capital transactions. Different countries' anti-money laundering regulatory standards not only lengthen the transaction processing cycle but also bring the risk of compliance conflict in cross-border business. . In the process of cross-border transactions, the exchange rates of related currencies are also changing in real time. As a result, the long transaction time will cause unnecessary loss of exchange rate to recipients or remitters in different countries and regions, which may have a greater impact on B2B and C2B transactions.

In the process of SWIFT transfer, some false order transactions or illegal transactions will be carried out, which will also have a certain impact on financial institutions and criminal investigations in different countries, causing some difficulties and unnecessary financial risks. For example, 45 days after the September 11 incident, the United States promulgated the United States Act to Unite and Strengthen by Providing Necessary Tools to Intercept and Stop Terrorism, referred to as the Patriot Act to restrict illegal financial activities.

2.2. Development status of digital tools involved in cross-border payment

Many countries have studied the limitations of existing technologies and financial transactions and launched some legal pilot projects of cross-border transactions in digital currency. It aims to conduct fast cross-border transactions through national digital legal tender, establish a fast cross-border transaction network, and provide a brand-new scheme for faster and lower-loss cross-border transfer. Among them, digital RMB is a new payment tool launched by the People's Bank of China, which belongs to China's national legal digital currency. It adopts a mixed technology architecture, is not entirely based on blockchain research and development, and is equivalent to physical RMB, providing a new solution for daily offline payment and cross-border payment scenarios. Digital RMB can realize offline transactions by relying on NFC function of mobile phone and is not restricted by mobile network conditions. Domestic commercial banks actively participate in the pilot project of digital RMB, and at the same time lay out and build CIPS RMB cross-border payment system. It should be noted that CIPS belongs to RMB cross-border clearing infrastructure and is independent of the digital RMB system.

In some countries, their governments have introduced relevant bills, which provide a legal basis for the future development of cryptocurrencies. For example, the US federal government issued the National Innovation Act on Guiding and Establishing American Stable Currency, which aims to supervise cryptocurrencies from the legal level, bring them into the regulatory framework of compliance, set compliance requirements such as full reserve, information disclosure and third-party audit, and maintain the issuance and currency stability of stable currencies by controlling the risks of reserve assets. At the same time, as an example, the bill further improves the compliance requirements for the issuance of stable currency, and its issuers need to hold relevant compliance licenses and join the in-depth AML anti-money laundering supervision. Trading with cryptocurrency and service providers or financial technology institutions in major business sectors need relevant compliance audit and information disclosure in normal operation, and they also need to hold relevant compliance licenses.

In recent years, more and more compliance service providers have begun to improve their service compliance by increasing the relevant licenses in different countries and regions or upgrading the original licenses. Some institutions or companies also accept the supervision and review of the financial regulatory agencies in the countries where the legal subjects are located, further improving the compliance of financial services. It has the same benefits, enabling some banks to actively carry out financial integration of legal tender and related stable currency with relevant compliance

DOI: 10.54254/2754-1169/2026.39368

agencies, and enabling cryptocurrency to break through the original blockchain and enter traditional financial institutions. For example, Kraken provides local bank accounts of GBP and EUR's BANKING CIRCLE S.A for EEA and its British residents and provides local bank accounts of LEAD BANK for American residents, which greatly promotes the development of compliant stable currency and the development of traditional financial industry to digital cross-border financial system.

In the existing market base, the traditional cryptocurrency cannot be popularized in daily life, and some countries or regions cannot support the direct financial interoperability between local banks and encrypted payment platforms, and at the same time, the birth of encrypted payment cards is born in this case. Encrypted payment cards are also known as U cards, and now they have become a method of withdrawing money with a large number of users. More and more platforms begin to follow up and issue related brand encrypted payment cards with their own brands, among which encrypted payment cards are mainly consumed through VISA or Mastercard networks, and the encrypted payment cards in the market are uneven, which leads to uneven losses in the payment process of some platforms or institutions. Some platforms usually have high handling fees and currency conversion fees, which leads to too complicated consumption process and many unnecessary handling fees. Among them, compliance and safety of funds are the most important things. Some payment service providers (PSPs) belong to private companies and have applied for relevant business licenses. Most of the encrypted payment cards issued by private companies belong to corporate accounts opened by companies on overseas platforms, such as corporate virtual cards or physical cards developed by Caas platforms such as Airwallex, Sunrate and Qbit, and corporate cards with Apple Pay and Google Pay functions and are bound to the corresponding API card-issuing services to provide encrypted payment cards to individual customers. There are also many practical problems with the encrypted payment card mode. Many platforms do not support direct deposit of cryptocurrency, and service providers need to use overseas cryptocurrency OTC platform to convert cryptocurrency into legal tender before settlement. It is difficult to fully guarantee the safety of funds under this mode: some service providers fail to implement the anti-money laundering audit, adopt centralized fund storage, and lack deposit insurance and authoritative credit endorsement.

More encryption service providers also add code scanning payment functions to their original encryption payment card business. In recent years, more and more countries have begun to access the national mobile payment method, which can simplify the original payment method and provide efficient payment schemes. Many companies begin to access local payment methods through cross-border payment interfaces, and use local currency to pay in different countries, so that people who are traveling or living in the local area enjoy localized and low-loss payment methods.

3. The legal digital currency and the development opportunities of compliant and stable currency in cross-border payment

3.1. Cross-border payment opportunities brought by statutory digital currency

In the real cross-border payment scenario, the SWIFT message network relies on the agent banking system, which has some pain points such as slow clearing speed, high transaction cost and lengthy intermediary chain. For statutory digital currency, digital design can effectively reduce the level of cross-border agency transit, reduce the loss of intermediate transactions, improve the efficiency of transfer, and alleviate the transaction risks brought by artificial credit in the traditional mode, which has become an important innovative scheme for cross-border payment.

DOI: 10.54254/2754-1169/2026.39368

Statutory digital currency can rely on distributed ledger technology to improve the traceability of cross-border transactions and help strengthen the supervision of anti-money laundering and anti-terrorist financing. However, to give full play to this advantage, it is necessary to establish a compliant data retrieval and information sharing mechanism between cross-border regulatory agencies, and finally realize the convenience of cross-border payment business and the effectiveness of supervision. Statutory digital currency can provide new cross-border payment solutions for countries and regions with weak cross-border financial infrastructure. The rapid deployment of this model will help emerging markets fill the shortcomings of cross-border financial infrastructure, expand the space for foreign trade and economic cooperation, and optimize the use and management of foreign exchange. The chain transaction mechanism of legal digital currency can effectively improve the processing speed of transnational cross-border transactions and provide a new path for the cross-border circulation of traditional legal tender.

3.2. Cross-border payment opportunities brought by compliant and stable currency

The compliant stable currency provides a brand-new transaction solution for the traditional financial market, adapts to cross-border remittance of small retail, lowers the cross-border payment threshold for ordinary individuals and small and medium-sized foreign trade enterprises, and enables enterprises to conduct more efficient and fast cross-border transactions with the help of the compliant stable currency. At the same time, it relies on the blockchain to run 7×24 hours, breaking through the time limit of the traditional clearing system and providing a lightweight settlement tool for cross-border e-commerce and small cross-border trade. Cross-border services and trade are no longer limited to regional restrictions and affected by time difference, and at the same time, exchange rate loss and cumbersome procedures caused by time can be effectively avoided in cross-border transactions. Provide B2B and B2C cross-border fast collection channels for foreign trade industry. For example, Photonpay cooperates with OTC service providers of compliant and stable currencies to carry out foreign trade collection and on-line receipt as well as mutual conversion between compliant and stable currencies and legal tender for Hong Kong companies; Stripe also provides compliant and stable currency receipts for American companies.

At the same time, the compliant and stable currency provides individuals with convenient business of cross-border services. The global liquidity and compliance of compliant stable currency provide a new way and method for individuals to subscribe and pay across borders, which is convenient for individuals and enterprises in different countries and regions to subscribe to network information services and cross-border advertising services. At the same time, the advertising business of AI subscription and overseas platforms of cross-border e-commerce or foreign trade can also rely on stable currency. At the same time, the compliant and stable currency can ensure that its exchange rate is 1:1 with the legal tender, which can reduce the related exchange rate loss. In other personal cross-border businesses, it can simplify the localized payment methods of cross-border tourists and promote the circulation process of local currency. For example, encrypted payment cards can be exchanged for local currency through card organization VISA or Mastercard or traded through local QR-code payment mode, and the member countries can use local currency to trade, which can reduce the market dependence on the US dollar.

Compliance and stable currency also promoted the development of RWA and chain stocks. As a kind of financial settlement, compliant stable currency provides a virtual compliance solution for the winding of real transactions. RWA activities can be realized by tokenizing real assets, and compliant stable currency such as USDC/EURC is the most mature RWA asset at present. RWA is to issue related tokens in accordance with the relevant legal framework and with the help of blockchain

DOI: 10.54254/2754-1169/2026.39368

technology, and the tokens correspond to the legal rights of related real assets. RWA's completion of the winding of real assets can reduce the uncertainty of legal ownership of real assets caused by artificial credit problems in the transaction process and the impact of damage or loss of real contracts or agreements. RWA can achieve asset fragmentation, split large physical assets into small tokens for trading, and significantly reduce the threshold for investors to participate; Relying on the blockchain to achieve 7×24 hours global transaction settlement and real-time delivery, it is no longer completely subject to the opening time of traditional exchanges, and it takes time to reduce the intermediate clearing of exchanges, but business development still needs to comply with the financial supervision rules of various territories; RWA can automatically distribute rent, dividends and income through smart contracts. At present, RWA's mainstream trading assets are real fixed-income products, commodities and real estate, and at the same time, it has realized the winding of equity funds and artworks. It has opened up TradFi traditional finance and Defi, introduced traditional low-volatility interest-bearing assets, and brought high-quality assets in the traditional real world into the blockchain lending market, satisfying the shortcomings of huge fluctuations in assets on the traditional primary chain. Compliance stable currency belongs to the legal version of the legal tender on the chain, and assets such as RWA and US stocks on the chain need to be priced and traded with the help of compliance stable currency. At the same time, its price is stable and will not fluctuate greatly like other tokens, which meets the accounting and liquidation requirements of financial regulators.

4. The regulatory path

4.1. The regulatory path of legal cross-border payment in digital currency

The legal digital currency of all countries should adhere to the principle of monetary sovereignty, and the sovereign currency has legal effect and supports cross-border transfer transactions. For the supervision of compliant and stable currency, the issuer should be required to comply with the territorial legal requirements and implement the reserve asset isolation system. The reserve assets should be completely isolated from the issuer's own assets and deposited in the supervised custody banking institutions. The reserve requirements are full and highly liquid assets, and it is not mandatory to use all cash. At the same time, it is necessary to refer to the reserve management rules of EMT electronic currency tokens in the MiCA Act of the European Union to implement the asset product category restriction. The EU rules require that the proportion of highly liquid assets in the reserve should reach 30%, and this part of assets is not limited to cash deposits. Reserve assets shall be subject to regular audits by third-party independent accountants, submitted to regulatory agencies, and the details of reserves shall be disclosed to the public.

4.2. Regulatory rules for compliance and stability currency

Stable currency should give users the legal redemption right to ensure that users can redeem at par according to their face value; It is forbidden for issuers to pay interest to token holders to prevent stable coins from being recognized as deposit-type wealth management products and avoid conflicts with banking regulatory rules. Smart contracts require an authoritative third-party organization to complete security audit and vulnerability investigation, issue a regulatory compliance white paper, and fully disclose the token issuance structure and operation mechanism; Improve KYT (transaction monitoring) on the chain, and report and update the list of suspicious transactions and sanctions addresses in real time.

DOI: 10.54254/2754-1169/2026.39368

It is necessary to do a good job in AML anti-money laundering and KYC/KYB comprehensive compliance system, screen the sanctions system and its related transactions, and report relevant counterparty information for transactions larger than the threshold to complete the penetration of the underlying compliant stable currency link. Establish a sound regulatory compliance guarantee, update and integrate the global sanctions and blacklist database in real time and maintain AML/CFT compliance in anti-money laundering and combating terrorist financing. To maintain continuous reporting of regulatory information and submit relevant compliance audit information reports on a regular basis, it is necessary to achieve independent risk control and internal audit of the board of directors and make a good plan for crisis handling and recovery. At the same time, it is necessary to have the financial license of the corresponding jurisdiction, the background investigation and audit of the sensible person and his management, and the handling method of internal risk control, anti-money laundering and emergency plan. At the same time, if it is necessary to provide services to residents of the corresponding jurisdiction, it is necessary to have the corresponding legal subject license. For example, the issuer of compliant and stable currency in the EU must obtain MiCA license before it can carry out euro-related business and provide services to EU residents; The business in the United States needs to complete the MSB registration of FinCEN and obtain MTL currency transmission licenses in various States. The business should match the scope of the license, and a single license is not enough to support the long-term business development in the whole United States. In the subsequent operation after the relevant compliant and stable currency goes online, it is necessary to achieve relevant constraints at the same time, and it is necessary to complete the daily evaluation and report on the reserve assets, and at the same time, it is necessary to monitor the mobile banks; Decentralize the management of storage assets to reduce the risk of storage in a single bank or institution; In addition, it is necessary to report relevant large-value transactions, and some transactions exceed the threshold and need to start additional regulatory review. It is necessary to report and trigger the in-depth review of the transaction by relevant financial regulatory agencies and banks, as well as additional information and materials, and it is necessary to impose additional restrictions on the transaction when necessary.

5. Conclusion

This paper combs the inherent shortcomings of the traditional SWIFT cross-border payment system, analyzes the development status of legal digital currency and compliant stable currency involved in cross-border payment, and analyzes the realistic opportunities of them in cross-border scenarios. Statutory digital currency can reduce the agency transit link and improve the traceability of transactions; The compliant and stable currency is suitable for small-scale foreign trade and personal cross-border payment, which provides a settlement basis for RWA's real assets token. Combined with overseas mature supervision practice, this paper constructs a supervision path around asset reserve, user redemption right, smart contract audit, anti-money laundering and territorial license access, and provides governance ideas for risk prevention and control of digital cross-border payment.

There are some limitations in this study, mainly based on existing literature and extraterritorial bills to carry out normative analysis, lacking quantitative empirical analysis of actual pilot business; There is insufficient discussion on the implementation details of regulatory conflicts in different countries and cross-border regulatory cooperation. In the future, empirical analysis can be carried out by combining the pilot cases of legal digital currency and stable currency in various countries; Further explore the realization mechanism of cross-border regulatory information sharing and

DOI: 10.54254/2754-1169/2026.39368

multinational regulatory mutual recognition; Continue to track the development of assets in RWA chain and improve the supporting regulatory framework for real asset transactions in the chain.

References

[1] Shahen, A. M., & Sharaf, M. F. (2026). Central bank digital currencies and cross-border digital payments: A systematic review in a fragmented global financial environment. *FinTech, 5*(2), 50.
[2] Wei, J. (2025). Whether stablecoins will replace the SWIFT system. *SAMRIDDHI: A Journal of Physical Sciences, Engineering and Technology, 17*(2), 38–46.
[3] Bimantara, A., & Nugraha, R. T. (2025). The politics of international cooperation in cross-border digital payment connectivity: A case study of QR payment system in ASEAN. *Sospol: Jurnal Sosial Politik, 11*(1), 82–99.
[4] Martens, W. (2026). From threat to opportunity: Digital infrastructure and bank adaptation to cryptocurrency cycles—global evidence. *FinTech, 5*(1), 20.
[5] Nobel, M. L., Giebe, C., & Mertanen, J. (2026). Cryptocurrencies in e-commerce: An assessment of their integration into online shops, shop systems and payment service providers.
[6] Duffie, D., Olowookere, O., & Veneris, A. (2025). The stablecoin balancing act. *Finance & Development, 62*(3), 32–36.
[7] See, K., & Tan, X. W. (2026). Compliance-aware agentic payments on stablecoin rails. arXiv preprint arXiv:2605.00071.
[8] Genc, H. O., & Takagi, S. (2024). A literature review on the design and implementation of central bank digital currencies. *International Journal of Economic Policy Studies, 18*(1), 197–225.
[9] Piech, K., & Pangsy-Kania, S. (2025). The impact of MiCA regulation implementation on the Polish crypto-asset market: Consequences, regulatory challenges and prospects for reform. *Ius Novum, 19*(4), 98–120.
[10] Li, Z., Kang, H., & Liu, X. (2025). Ultramixer: A compliant zero-knowledge privacy layer for tokenized real-world assets. *Cryptology ePrint Archive*.