OCC interpretive letter 1174:

DLT and stable coins

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United States OCC interpretive letter 1174: DLT and stable coins

The United States Office of the Comptroller of the Currency (OCC), a federal supervisor of national banks and cooperative banks, issued new general guidance about stable coins and distributed ledger technology (DLT) enabled payment applications. In its interpretive letter 1174 of January 2021, its staff endorses the integration of DLT with existing banking operations including the deployment of stable coins and extension of banks' payments related activities. The letter supports the role of banks in providing DLT-enabled payment services including for real-time settlement systems and value transfers acknowledging that stable coins may serve similar functions as debit cards and checks. The implications for banks are at least fourfold: adoption of token-based payment mediums by banks, DLT-enabled bank operations may supersede some if not all payments infrastructures, tokens may impose new business models, integration of tokens with existing core banking and payment functions.

The OCC highlights the emerging importance of DLT-enabled payments applications and projects DLT as increasingly necessary to serve evolving client payments needs. The emergence of central bank digital currencies (CBDC) further supports a proliferation of DLT-enabled financial instruments and their increasing role in the financial system. Considerations for and likely adoption of CBDC will lend credibility for DLT-platforms. The adoption by banks of stable coins would allow banks to complement CBDC and share a common DLT-enabled payments infrastructure.

DLT-enabled payments have gained in significance especially in international payments. CBDC has been elevated to the core of the international economic policy agenda amid deliberations of the G20 to play a key role in improving international payments. The ECB report about a digital euro has offered a novel approach to international payments by stipulating that non-residents may hold a future digital euro. The announcement of the diem (libra) currencies by the Diem Association (Libra Association) has affirmed that DLT-enabled payments will play an increasingly important role in international payments. Leading commercial banks have similarly developed DLT-enabled payment mediums. The tokenization of payments is seen as part of a broader trend toward an increasing diversification of payments by actors, geography and mediums.

OCC's position on DLT and stable coins

The interpretive letter outlines the legal permissibility of using certain DLT-enabled applications including stable coins by national banks and federal savings associations to facilitate payment activities. The OCC concludes that a bank may operate a node on a DLT-enabled network and use stable coins to conduct permissible payment activities. The letter emphasizes the intermediation role of banks and views the adoption of DLT-enabled applications consistent with the changing financial needs of the economy and increasing demand for faster and more efficient payments.

The OCC views stable coins as a mechanism for storing, transferring and exchanging an underlying fiat currency. Banks may use stable coins to facilitate payment transactions and

exchange stable coins for fiat currency. The OCC describes that a stable coin functions as a payment mechanism similar to debit cards, cheques and electronically stored value (ESV) systems. It stipulates that the creation, sale and redemption of ESV in exchange for dollars is part of the business of banking being equivalent to the issuance of traveler cheques and as ESV systems are part of the payment system. Stable coins like an ESV card are considered an electronic representation of dollars. The OCC also regards stable coins as providing a means of fiat currency to access DLT-enabled payment rails.

The OCC supports the use of stable coins to replace existing payment systems and banks assuming more prominent payment system roles. It also affirms the view that DLT-enabled systems may be more resilient than centralized systems amid their decentralized nature. The OCC affirms that national banks may engage in activities related to electronic funds transfer systems, real-time settlement systems and stored value systems as part of their permissible payments-related activities.

The OCC maintains a restrictive position on the required reserve practice of stable coins. It sustains that stable coins would need to be reserved 1:1 with adequate financial resources which would make stable coins significantly more onerous than bank deposits unless those resources could be regular risk weighted bank assets. The OCC does not appear to assign to stable coins a similar prudential framework as for deposits despite similar commitments of convertibility of deposits into fiat currency.

The letter does not employ the term token. However, it may be inferred from its deliberations that DLT-enabled payment applications and use of stable coins are based on tokens.

DLT-platforms

DLT-platforms represent in many respects an evolution of exchanging value and communication among banks. Banks have maintained strictly autonomous ledgers and communicate with external entities mostly through trusted messaging systems. DLT-platform participants share a common ledger. They thus internalize the constraints of conventional bank payment relations.

DLT-platforms consist of synchronized ledgers distributed through a peer-to-peer network. The integrity of the network rests on a consensus algorithm that validates and records all transactions irrevocably and with a timestamp to ensure all network participants view the same information at all times and that there cannot be any double-spending. DLT-platforms are considered to be best suited for the issuance, circulation and redemption of tokens.

DLT-platforms include Corda, Hyperledger Fabric, Quorum, Ripple, Tezos and other. Each platform exhibits distinct features and functionalities, can be permissioned or public to enable payment-related activities. Platforms can be open-source or enterprise-grade offering different performance, scalability, privacy, security and other attributes.

Banks would need to offer a DLT-enabled infrastructure to participate and offer clients services in DLT-enabled applications. Banks would run a node on a DLT-network, issue wallets to end-users to perform DLT-related operations, facilitate integration with existing core banking and payment

systems. The criteria for issuing wallets to end-users should be equivalent to any normal onboarding of customers.

Tokens

Tokens represent a new format of money to complement paper and book-entry or scriptural monies. Tokens exhibit characteristics akin to bearer instruments and can be transferred peer-to-peer with an irrevocable reassignment of ownership by a simple token transfer similar to sending an e-mail.

Tokens are well adapted to perform payment functions and as a store of value. The native capabilities of tokens facilitate certain transactions, in particular peer-to-peer transactions, bi-directional transactions and instant token for token exchanges whereby all aspects relevant to the transaction are reconciled and settled with the token exchange.

Banks can issue tokens as payment instruments and as any bank asset and liability. As payment instruments, tokens would perform similarly to a debit card or cheque as medium of exchange with the possibility to afford instant payment. As tokenized assets and liabilities, banks may choose to hold or issue tokenized securities and other financial instruments to increase balance sheet diversification by instrument and build a presence on new financial market infrastructures.

Tokens affect banks' balance sheets differently than accounts. While in an account-based system, a transfer increases the balance sheet of the payee's bank, transforms the claim for the end-user to a claim on the payee's bank and transfers occur on the basis of bilateral bank account relations, in a token-based system, an inter-bank transfer on behalf of end-users does not change the size of the balance sheet of the payee's or payer's bank, preserves the claim for the end-user as a claim on the payer's bank and transfers occur directly between payer and payee.

Tokens are programmable through smart contracts enabling new functionalities for conducting and automating payments. Tokens can incorporate complex business logic to facilitate escrow and multi-event-dependent operations as determined at issuance. Smart contracts would also allow attaching to tokens needed prudential regulations to ensure set standards are met.

Tokens require custody arrangements as they are property of the payee not of the payee's bank fundamentally changing the relationship among banks and clients. Payees will require warehousing of the tokens whereby warehousing of the tokens would be off-balance sheet for the banks similar to offering a deposit box.

Stable coins

Stable coins are fixed parity liabilities normally denominated in a national currency used as medium of exchange and issued in a token format. The fixed parity commitment is similar to a fixed exchange rate or the convertibility of bank deposits and any national currency denominated liability. Banks may issue stable coins to constitute negotiable deposits that can be used as

mediums of exchange for intra-bank transfers. If banks allowed non-bank customers to conduct payments in a bank issued stable coin, stable coins would assume currency-type characteristics.

Token payments

The adoption of tokens may shift the role of banks in payments relative to existing payments infrastructures. Tokens can be exchanged peer-to-peer enabling banks to facilitate direct payment activities through wallet functionalities outside the existing payments infrastructures including real-time settlement systems for own account and on behalf of clients. Tokens serve to facilitate direct payments relationships potentially establishing a new payments architecture in particular for international payments.

DLT-networks do not rely on conventional identity provision and payment instructions. The network configuration rests on network nodes containing root certificates and key stores to reside on the network. The connection of nodes occurs on authentication against each other based on a common root certificate. All address configurations—public keys—are advertised and externally connectable by all nodes typically to external off-chain data through an oracle.

Token networks

Banks may establish and participate in different DLT-networks. DLT-networks alter bank relations that become immediate and direct and change fundamentally how banks exchange values and communicate. Different DLT-networks will likely co-exist:

- **CBDC network:** Central banks are expected to maintain and operate their own DLT-networks to issue and circulate CBDC to serve as settlement medium in conjunction with select resident financial institutions.

- **Internal bank network:** Banks may provide access to their clients to an internal network among its different subsidiaries to facilitate intra-bank international payments and extend use as payment medium with non-clients.

- **External bank networks:** Banks may form a common international network through a consortium to enable inter-bank international payments through DLT-enabled applications including common or separate but inter-operable digital coins.

- **Non-bank public networks:** Public payment networks may emerge to facilitate non-bank domestic and international payments.

The geographic dimension of payments is expected to change with the adoption of DLT-networks. Networks do not need to follow existing territorial or prudential boundaries[1]. There is an assumption that non-residents will have equal access to resident payment operations. Participants in central bank and internal bank networks are expected to be national or domestic. External bank networks and non-bank public networks would tend to be international.

DLT-networks will need to be inter-operable across DLT-networks and integrated with existing payments systems to enable universal transactions. DLT-network inter-operability shall refer to the possibility to conduct simultaneous transactions across two or multiple networks. It shall not refer to the possibility of tokens of one network to circulate on another network. Cross DLT-network exchanges rest on both participants in the transactions operating on both networks whereby some networks may be more restrictive, e.g. CBDC networks and internal bank networks, than others. The integration with existing payments systems will be based on payment instructions shared with the DLT-network.

Bank balance sheet tokenization

The adoption of tokenized mediums by banks would change composition and features of banks' balance sheets. Bank asset and liabilities can be partially or fully tokenized to enable banks to migrate to token-based financial market infrastructures either directly as e.g. financial assets being issued on a DLT-platform or indirectly through a digital twin. Smart contracts to automate certain token functions would enhance rules-based provisions for trading. The result may improve conditions for trading and mobilizing value.

Tokenization shares features with securitization. Banks have adopted securitization e.g. mortgage-back securities for decades. But securitization is a slow, opaque and expensive process, normally using special purpose vehicles and requiring dedicated management. Tokenization offers an easier and cheaper approach. DLT facilitates secure information sharing about the underlying assets, offers full transparency through the token's life cycle and provides a native path to fractional asset ownership.

Banks may seek tokenization to improve balance sheet and risk management. Tokenization could boost liquidity by offering the possibility to trade fractions of assets and liabilities. A tokenized mortgage could be traded or pooled. A tokenized deposit could allow its holder to transfer partial ownership to a third party. Smart contracts would facilitate reconciliation of transfer of ownership, ease administration of dividend payments, voting rights, prepayments and other debt events.

The biggest direct gain from asset tokenization may come from tokenizing previously mostly illiquid assets. It may allow banks where their hold illiquid and often indivisible assets to sell-off full or part of the assets. Similarly, owners of illiquid and indivisible assets may find it easier to pledge or partially sell their assets. Another key gain comes from the simplification of the token life

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[1] Network operations will remain bound by the regulations applicable as determined by economic ownership and residency of the participants.

cycle and trading of asset tokens when settled against tokenized payment mediums like CBDC and stable coins bringing important efficiency advantages for banks and their clients.

Next steps

Banks may need to consider adoption strategies for stable coins and DLT-enabled payments applications. Adoption may require a review of existing payments strategies, customer relations and could lead to new business models and clients strengthening the intermediation role of banks and supporting financial deepening.

Banks will need to establish capabilities to identify the best suited DLT-platform, operate nodes on DLT-networks and issue and administer wallets for their clients. DLT-related operations will need to be seamlessly integrated with existing core banking and payment functions.

Custody solutions will need to be offered. Custody is set to become an essential service to enable customers to use and interact with tokenized financial instruments.

Stable coin pilots would allow banks to assess the potential role of stable coins in their offering portfolios and what additional infrastructure measures would be needed to accommodate new payment functionalities.

DLT-enabled payments applications may allow banks to redraw their payments relations with branches, subsidiaries, counterparts and clients to identify possible adaptations and changes. Banks may need to review to what extent existing payments relations and payments infrastructures remain adequate.