



Next Generation Money

Use cases and potential of tokenised money

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Summary

Tokenised money is becoming a key component of digital financial and the economic systems of the future. It allows payments to be integrated directly into digital processes, transactions to be processed automatically and new forms of economic interaction to be established. This goes beyond the functions of traditional forms of money and unlocks new potential for benefits and value creation.

At the same time, we are seeing different forms of tokenised money emerging, and for good reasons. The various forms – in particular stablecoins, tokenised bank deposits and digital central bank money – differ in terms of accessibility, regulatory inclusion, technological architecture and economic function.

Considering the specific use cases makes it clear that tokenised money is not an end in itself. Its benefits depend on the specific context in which it is used. Different use cases have different requirements, such as availability, programmability, integration into existing systems or regulatory safeguards.

Stablecoins play a central role in consumer-facing applications, such as access to stable currencies or early forms of payment via autonomous AI agents. They are already available, can be used worldwide and are relatively easy to integrate into digital applications. At the same time, their potential uses are hampered by inconsistent regulatory requirements, as well as issues relating to stability and governance.

Tokenised bank deposits are therefore becoming increasingly important for business applications and industrial processes. They enable programmable payments, close integration with existing banking and treasury systems as well as the automation of complex business processes, such as in supply chain financing, in liquidity management or Industry 4.0. Many of these use cases are currently located

in the pilot or early implementation phases, but nevertheless show considerable potential for scaling up.

In the context of financial markets and interbank transactions, efficiency, security and settlement finality are paramount. Here, forms of digital central bank money, particularly in the wholesale sector, offer the potential for settlement with reduced counterparty risk and short settlement times. However, the majority of these solutions are still at the development or testing stage.

Overall, there is currently no sign of a uniform standard for tokenised money emerging. Instead, it is reasonable to assume that there are currently various forms of money coexisting, each addressing different needs and use cases and collectively complementing one another across a wide range of applications. This will lead to market fragmentation in the foreseeable future.

Banks, businesses and public institutions need to evaluate tokenised money in the context of specific use cases. It is crucial to identify relevant use cases at an early stage, keep abreast of technological and regulatory developments and prepare for integration into existing systems and processes.

The further development of tokenised money will depend largely on the extent to which interoperability between different systems is achieved, regulatory clarity is established and viable business models are developed. Under these circumstances, tokenised money can make a significant contribution to improving efficiency and further developing the financial system. As a result, tokenised money also becomes a strategic factor for innovation, sovereignty and Europe's long-term global competitiveness.

1 Introduction

The continuously advancing process of digitalisation is increasingly changing the way the economy and the financial system operate. In particular, the development of distributed ledger technologies (DLT) is opening up new possibilities for the transfer of value, the automation of transactions and the integration of payment processes in digital applications.

This is leading to the emergence of a new generation of forms of money that go beyond the characteristics of traditional cash or account-based bank money. Tokenised forms of money are native to the digital realm, based on distributed ledger technology (DLT), and can be integrated directly into digital workflows in the form of programmable payments. As a result, they enable new use cases that are only possible to a limited extent, or not at all, with existing forms of money.

The development of innovative forms of money is not an isolated phenomenon, but takes place within the broader ecosystem of digital assets. This includes both digital goods and tokenised assets that represent real or intangible assets in digital form. As the use of such digital assets becomes increasingly widespread, new economic processes and interactions are emerging. In order for it to work efficiently, money must also become technologically compatible. The current developments therefore represent not so much a break with the past, but more of an evolutionary development of money – from physical currency to digitised book money and forms of money that are native digital, interoperable and suitable for programmable processes.

2 The evolution of money: classification and new forms

The various forms of tokenised money first need to be classified within the existing monetary system.

2.1 Central bank money

Nowadays, currencies are the primary form of state-issued money. As money issued by central banks, they embody a state's monetary sovereignty and constitute a universally accepted form of legal tender. Although the vast majority of the money supply is created in the form of bank money deposited at commercial banks, central bank money forms the foundation of the financial system.

Cash in the form of coins and banknotes is currently the only physical legal tender. It constitutes a direct claim against the central bank and is characterised by immediate finality, very high acceptance for payments and the ability to conduct transactions without the need for technical infrastructure. Furthermore, cash offers a high degree of privacy, as payments can generally be made anonymously.

Digital cash, also known as **Retail Central Bank Digital Currency (Retail CBDC)**, transfers these characteristics into the digital realm. Like physical cash, it is issued by the central bank in the official national currency and also constitutes a direct claim against that central bank. Numerous countries around the world are working on similar projects; alongside initiatives in China and Sweden, among others, the European Central Bank's (ECB) digital euro is one of the most important flagship projects.

The ECB's digital euro, in its retail form, is intended to facilitate access to and acceptance of digital money for citizens and other economic actors. As things stand, it will not be based on a blockchain/DLT infrastructure and therefore does not constitute a form of tokenised money, but rather resembles the electronic payment methods that are widely used today. It is primarily designed to be used in the euro area and is expected to be subject to transaction limits. It is therefore not suitable for business-to-business payments or for global payment or financial market applications and will not be considered further in the following.

In addition to digital cash for the general public, central banks around the world are also discussing the introduction of digital central bank money for the interbank and financial markets, known as **Wholesale Central Bank Digital Currency (Wholesale CBDC)**.

Wholesale CBDC is aimed exclusively at selected, regulated financial market participants such as commercial banks, central securities depositories or other financial institutions. It is not intended for general payments, but rather for the processing of large-value payments, such as in interbank transactions or securities trading.

Unlike retail CBDCs, wholesale CBDCs do not prioritise widespread accessibility, but rather efficiency, security and automation. By using digital central bank balances based on modern distributed ledger technologies, settlement times can be shortened, risks reduced and processes further automated. In particular, the immediate finality of payments and the seamless integration of cash and securities transfers are regarded as key advantages.

Wholesale CBDC is therefore primarily seen as a further development of existing central bank reserve systems, rather than as a new form of money for the general public. Many central banks are researching relevant use cases in pilot projects, often in close collaboration with financial market infrastructure providers and commercial banks.

2.2 Commercial bank money (book money)

Bank money, also known as scriptural money, supplied by commercial banks is the most commonly used form of money today. It exists in the form of demand deposits in bank accounts and represents a claim by the account holder against the relevant credit institution. Most bank money is created by commercial banks in the lending process. In principle, it can be redeemed by depositors as central bank money (cash) at any time on request. Unlike cash, however, bank money is not legal tender, but privately issued money whose acceptance is based on confidence in the issuing bank's solvency and on the regulatory framework. The statutory and voluntary

deposit guarantee schemes provide additional assurance that commercial bank money can be converted into central bank money at any time.

Although bank money is already entirely digital today and is transferred electronically from bank to bank via established payment systems, there is still a need for further development towards **tokenised bank money** or **tokenised bank deposits**. They represent bank deposits in the form of tokens that can be processed on a blockchain. This enables cash flows and industrial business processes to be settled simultaneously within a single system (delivery-versus-payment or payment-versus-payment) and allows for programmable instant payments. Current solutions are mostly proprietary and based on private blockchains with restricted access, which means they have very limited interbank applicability. The lack of interoperability and the small number of use cases implemented to date currently represent significant barriers to the widespread adoption of tokenised bank money, particularly when compared to the form of account-based commercial bank money that is prevalent today.

2.3 Other forms of private money

Stablecoin represents another form of private money on the blockchain, which is currently growing at a particularly rapid pace. These are digital tokens whose value is pegged to a stable benchmark – typically a fiat currency such as the euro or the US dollar. They combine the advantages of blockchain-based systems with a stable store of value, as they are backed by liquid reserves such as bank deposits or high-quality assets denominated in the reference currency.

This means that stablecoins have comparable functions with **e-money**. E-money is privately issued, fully backed digital money that represents a claim against the issuer which can be redeemed at any time and does not allow for money creation. In the EU, stablecoins that are pegged to a single official currency are therefore regulated as **e-money tokens**, which may only be issued by licensed e-money institutions or credit institutions. Under European law, neither e-money nor e-money tokens are permitted to generate interest for their holders.

The following table compares the tokenised forms of money described above based on their inherent characteristics.

Features	Wholesale CBDC	Tokenised bank money	E-money token (stablecoin)
Legal status	Central bank money	Commercial bank money (scriptural/book money)	E-money under MiCAR
Issuer	Central bank	Commercial bank (deposit-taking institution)	E-money institution or commercial bank
Claim against	Central bank	Commercial bank	E-money issuer
Coverage reserves	no	no	yes
Money creation	yes	yes	no
Interest-bearing	yes	yes	no
Programmable payments	yes	yes	yes
Access	limited, banks only	access currently limited, to selected customers only	open to the general public
Availability	pilot projects	pilot projects, individually productive	productive

Figure 1: A comparison of the features of tokenised forms of money

3 Practical examples of the use of tokenised money

Tokenised money is becoming increasingly important as assets are digitised and digital ecosystems become more interconnected. It enables direct transferability and the automated processing of transactions based on distributed ledger technologies, opening up new possibilities for efficient payment, financing and settlement processes.

The following real-world examples illustrate the scenarios in which tokenised forms of money are already being used or could potentially be used in future, and the resulting economic benefits. Figure 2 provides a summary of the use cases under consideration and categorises them by target group and current implementation status.

Use cases of tokenised money

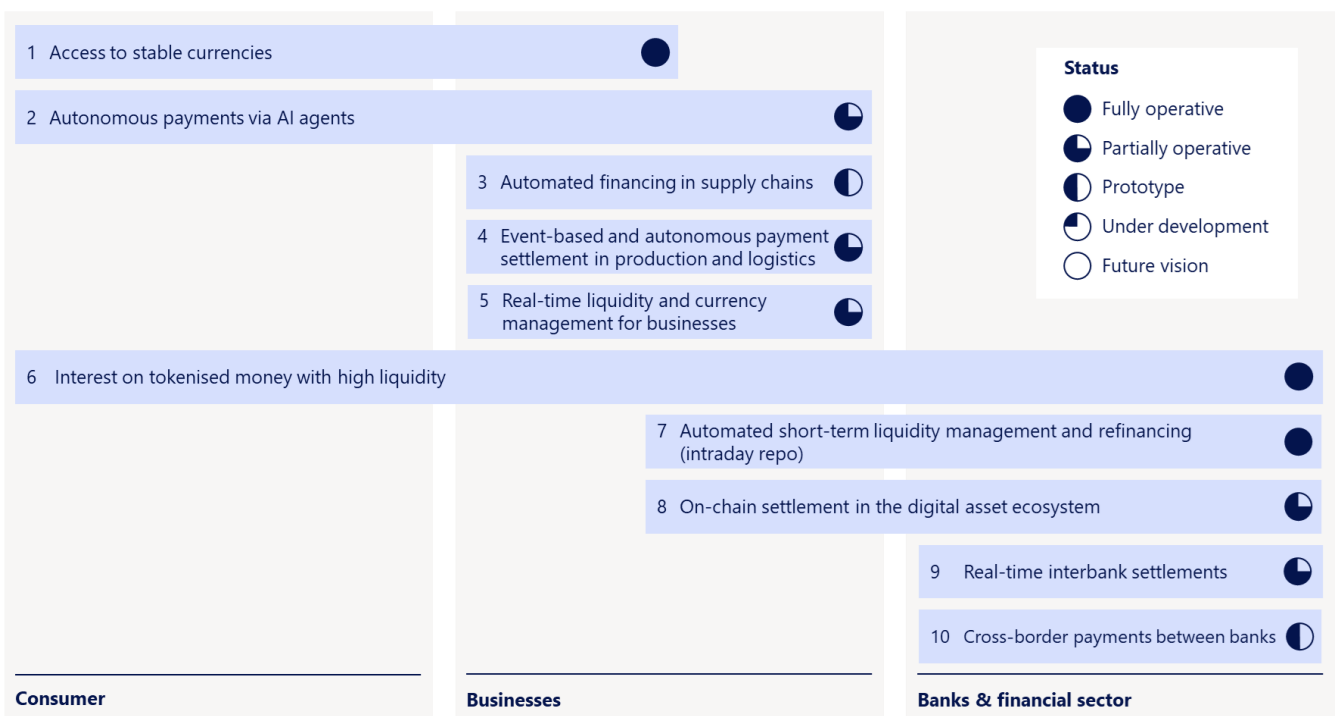


Figure 2: Overview of selected use cases by target group and status

3.1 Access to stable currencies

In economies with unstable local currencies, there is often high demand for stable alternatives to safeguard purchasing power and ensure reliable everyday transactions. At the same time, access to such currencies is limited for many households, retailers or businesses, for example due to a lack of bank accounts or regulatory restrictions.

Stablecoins, which are pegged to established fiat currencies such as the US dollar or the euro, provide digital access to money that retains its value in this context. Digital wallets allow users to purchase, hold and use stablecoins for transactions without necessarily having to rely on traditional banking infrastructure. Payment service providers and retailer solutions are increasingly integrating stablecoins into existing payment processes, making them easier to use in everyday life. This is partly due to international payment networks such as Visa and Mastercard supporting solutions that enable card payments to be processed via stablecoin wallets rather than bank accounts. Equally, leading payment service providers are integrating stablecoin payments directly into retailers' point-of-sale systems and online checkouts, enabling retailers in developing countries to easily accept payments – particularly in US dollars.

This use case is particularly relevant in developing countries affected by highly volatile exchange rates and high inflation, such as those in Latin America, Africa and South-East Asia. In these regions, its use is already widespread and has seen high adoption rates, particularly among consumers and smaller retail and service businesses. However, for further scaling up, the key factors are primarily a suitable regulatory framework and growing acceptance within the retail sector.

At the same time, there is a growing tendency in economies that are already partially or fully dollarised to respond to the increasing use of digital US dollars through regulatory frameworks. In some cases, regulations are introduced with the aim of preventing further dollarisation – particularly in countries with strict capital controls or closed exchange rate systems.



Target group

Consumers and small businesses (e.g. retailers, particularly those in developing countries with unstable and inflationary currencies)



Forms of money

Stablecoins (pegged to stable fiat currencies such as, in particular, the US dollar or the euro)



Status

Fully operational (a use case that has been established for several years and has a high adoption rate in many developing countries, e.g. in Latin America, Africa and South-East Asia)

456

billion US dollars

The economic potential of Agentic AI is estimated to reach this amount between 2025 and 2028 in 14 major industrialised and emerging economies alone.

(Source: Capgemini, 2025)

3.2 Autonomous payments via AI agents (Agentic Commerce)

In recent years, AI-based systems have been increasingly integrated into decision-making processes. Initially designed primarily to assist with everyday personal tasks, such as searching for information, online shopping or planning individual trips, they are now increasingly being used in businesses, where they automate operational workflows and systematically support decision-making. AI agents are being used more and more frequently; they make decisions independently and take on increasingly complex tasks. Today, autonomous agents can, for example, compare prices, request quotes and, under certain conditions, even conclude contracts on behalf of the user – at the same time, they must obtain and pay for the required information. This means they take on independent roles within a value chain, with the diversity and complexity of their tasks constantly increasing.

In order to realise the full potential of autonomous agents and to more fully automate business processes, they need access to money and/or payment functions. At the same time, it is necessary to limit the scope within which AI agents can operate autonomously in an economic context to prevent the occurrence of unforeseeable risks. To achieve this, agents must only be allowed to make payments within clearly defined parameters.

Tokenised forms of money make it possible to provide agents with their own wallets and clearly defined budgets. Within specified guidelines, they could make payments independently, for example to procure goods or services. This programmability enables close integration into digital processes as well as controlled use by the contracting party.

The added value lies in the enhanced automation of business processes, which merges decision-making and payment functions. The first use cases are already emerging, often based on unregulated stablecoins. However, robust verification, authorisation and compliance frameworks are required before they can become more widely adopted, particularly in the corporate sector.



Target group

Consumers and businesses



Forms of money

Stablecoin and tokenised bank money



Status

Operational on a trial basis (unregulated stablecoins in use, regulated stablecoins undergoing testing)

3.3 Automated financing in supply chains

In global supply chains, payment processes are often delayed, fragmented and administratively complex. This leads to inefficiencies and increased capital commitment, particularly for suppliers.

By integrating digital money into supply chain management, payments can be directly linked to logistical or operational events. Tokenised money acts as a digital payment instrument that can be directly integrated into smart contracts, enabling the synchronised settlement of payment and performance (e.g. in the sense of delivery-versus-payment). This means that payment initiation and processing are closely linked to the flow of goods and are triggered automatically as soon as defined conditions are met. In this way, tools such as dynamic discounting or reverse factoring can be implemented efficiently and in accordance with specific rules as soon as defined delivery or production milestones are reached.

Dynamic discounting

refers to the flexible granting of cash discounts or price reductions depending on the actual date of payment.

Reverse factoring

A financing model that improves suppliers' cash flows while allowing the buyer to maintain their payment terms.

The key benefit lies in improved liquidity management along the supply chain: Suppliers gain prompt access to liquidity and can reduce their financing costs, while buyers can manage their payment terms flexibly and optimise their working capital. At the same time, operational risks are reduced, as payments are directly linked to verified performance events and manual process steps, such as invoice verification and approval are no longer needed.

For banks, the close coupling of payment and proof of delivery enhances financing security, which in turn enables more favourable financing terms for suppliers. At the same time, the risk of fraud is significantly reduced by linking payments to verified logistics data.

This use case is currently mainly at the pilot and prototype stage, but offers significant potential for scaling up given the high volume of global supply chain and trade finance processes. Key requirements for widespread adoption include, in particular, the standardisation of smart contracts, interoperability between different systems and integration into existing financing and banking processes. Tokenised deposits, which can be seamlessly integrated into bank-based infrastructures, are particularly well-suited for this purpose.



Target group

Businesses (buyers, suppliers and logistics service providers)



Forms of money

Tokenised bank money; regulated stablecoins possible in future



Status

Prototypes and pilot projects available for multiple banks

3.4 Event-based and autonomous payment settlement in production and logistics

In production and logistics processes, payment and invoicing procedures are often still disconnected in terms of timing, fragmented across different systems and involve a considerable administrative burden. At the same time, value chains are becoming increasingly automated and interconnected, creating a need to integrate payment processes directly into operational workflows. However, this goes beyond the capabilities of traditional invoicing models.

Tokenised money makes it possible to link payments directly to specific events in production and logistics processes. External triggers – such as those from production facilities, IoT systems or GPS data – can automatically initiate payments as soon as defined conditions are met. For example, the manufacture of a product by a production facility or the arrival of a ship in port can trigger an immediate payment. Transactions are processed via blockchain-based business accounts, which access the relevant trigger information via interfaces (e.g. APIs) and initiate and document payments in real time.

An even more advanced approach involves equipping machines with their own wallets and tokenised money, enabling them to interact independently and process payments directly with one another (machine-to-machine payments). As a result, machines can independently purchase raw materials, carry out processing steps and then resell their (intermediate) products. This results in seamless, automated value chains in which payment and production processes are fully integrated. It offers particular advantages in production environments with different operating companies. Payments can be made directly between machines at any stage of the production process, thereby eliminating delays in settlement and reducing risks such as those arising from price fluctuations or non-payment. There are also specific use cases in logistics applications, for example where transport vehicles pay for fuel or electricity autonomously, and it is even possible to link the flow of energy to the payment process. This will also reduce undesirable incentives and potential misuse – as has been achieved through the use of fuel cards.

The key added value here lies in the automation of payment and invoicing processes, a reduction in administrative effort as well as greater transparency and traceability. Payments are made precisely when the service is provided, thereby increasing efficiency, improving cash flow management and reducing risks.

The technical foundations for these applications are largely in place, both in terms of IoT integration and equipping the machines with control units and wallets. However, widespread implementation requires, in particular, interfaces to be standardised, interoperability between systems and integration into existing industrial and financial infrastructures. In addition, there is a need for secure forms of money that can be clearly classified in legal terms and integrated seamlessly into automated, rules-based processes.



Target group

Businesses (especially industrial companies, production service providers, logistics companies)



Forms of money

Tokenised bank money and regulated stablecoins



Status

Operational on a trial basis (initial implementation in Industry 4.0 and logistics environments; broader multi-bank and machine wallet solutions are still under development)

3.5 Real-time liquidity and currency management for businesses

International businesses are faced with the challenge of efficiently managing liquidity in various currencies across different locations. Traditional systems are not designed to cope with real-time availability and require payment, currency conversion and settlement processes to be implemented separately. This leads to delays, limited transparency on available liquidity, requires more coordination between units and additional capital commitment.

Blockchain-based business accounts with programmable payment and FX functions enable liquidity management to be centralised and automated and for currency to be converted in real time (payment-versus-payment). For example, EUR accounts in Germany can automatically provide liquidity to USD accounts abroad based on predefined triggers. The currency conversion is integrated into the payment process and is not dependent on traditional settlement times. This provides businesses with transparency on their global account balances and they can flexibly shift liquidity between locations and currencies at any time. At the same time, the link to existing banking infrastructure remains so liquidity can be transferred between blockchain-based and traditional accounts. Automated processes reduce manual effort, potential errors and minimise settlement risks. Real-time transparency on account balances and payment flows also enables data-driven treasury management.

Productive solutions are already in place for major currencies such as the US dollar and the euro, whilst further currencies and use cases are currently under development. The solutions offered are based on established banking processes and utilise existing communication channels (e.g. EBICS). Integration into international payment infrastructures and the further automation of treasury processes are particularly important for widespread scaling up.

Tokenised deposits are especially well-suited to this context, as they can be seamlessly integrated into existing banking and treasury systems.



Target group

Businesses (primarily those operating internationally with global account structures)



Forms of money

Tokenised bank money; regulated stablecoins possible in future



Status

Operational on a trial basis (live products for USD and EUR, initial transactions successfully implemented, ongoing development and expansion to further currencies and markets; multi-bank solutions under development)

USD 9 billion

The volume of tokenised money market funds grew from USD 0.8 billion to USD 9 billion between the end of 2023 and the end of October 2025.

(Source: BIS, November 2025)

3.6 Interest on tokenised money with high liquidity

Tokenised forms of money often do not earn any or much interest, resulting in a lost opportunity for holders. There is therefore demand for short-term, liquid and interest-bearing forms of investments, which are technologically compatible with tokenised forms of money. Businesses, financial institutions and professional investors, in particular, need to ensure that surplus liquidity remains readily available at all times, whilst also generating a return on it efficiently.

Tokenised money market funds (TMMFs) and comparable instruments allow non-interest bearing tokenised money to be more efficiently transferred into interest-bearing investments. They are a fast-growing investment and savings instrument in the crypto ecosystem and are becoming increasingly important for professional liquidity management. Like stablecoins, TMMFs operate on public, permissionless blockchains, but offer returns at money market rates and regulatory protection as securities. TMMFs are tradeable on blockchain infrastructures, available around the clock and can be directly offset against customer accounts and/or wallets using stablecoins or other tokenised means of payment. Interest payments are processed automatically and credited directly to investors' wallets.

The number and volume of tokenised money market funds have risen sharply against the background of increasing regulatory clarity in important markets, such as the US. More and more international fund providers and banks are setting up tokenised money market funds, primarily in the US. Products denominated in euros are still largely in the early stages of development or in pilot phases and have so far only seen limited trading volumes. These make it possible to convert tokenised forms of money that do not currently bear interest – i.e. 'on-chain' – into interest-bearing, highly liquid forms of investment, thereby maximising interest income whilst maintaining high liquidity.



Target group

Consumers, businesses and financial institutions (primarily professional investors)



Forms of money

Tokenised bank money and stablecoins; potentially also wholesale CBDCs (provided these are available in future and both contracting parties have access to them)



Status

Fully operational (global providers offering USD-denominated products; products in other currencies such as EUR, CHF or GBP are mostly still in the pilot or development phase)

3.7 Automated short-term liquidity management and refinancing (intraday repo)

Financial institutions and businesses rely on flexible, short-term refinancing options for their liquidity management in order to actively regulate liquidity and efficiently meet their funding requirements. However, traditional repos are tied to fixed timeframes, as trading and settlement are subject to fixed market hours, settlement cycles and cut-off times. Furthermore, trade execution, collateral management and settlement often take place across multiple systems and are, in some cases, largely manual processes.

Repurchase agreements (repo transactions)

They allow parties to raise and invest liquidity short-term in the money market. This involves selling securities in exchange for liquidity and repurchasing them at a later date. For the seller, this represents secured financing; for the buyer, it is a short-term investment. Repo transactions are usually concluded with very short terms and serve to manage liquidity flexibly with reduced risk.

The use of tokenised money in combination with tokenised collateral enables the settlement of repos to be largely automated and flexible. Liquidity (cash) and collateral (e.g. bonds, shares or fund units) can be transferred directly between parties via blockchain infrastructure and incorporated into smart contracts. Settlement takes place simultaneously on a delivery-versus-payment basis, whereby the transfer of funds and securities are directly linked. Terms and conditions can be adjusted flexibly, even on a daily basis. Liquidity and collateral are automatically repaid at the agreed time, enabling precise management of maturities, optimisation of interest rate effects and a reduction in counterparty risk. These kinds of solutions also support liquidity requirements that can be planned for, e.g. for bond issues or securitisation transactions. Overall, this results in greater flexibility, more efficient use of liquidity and lower operational costs.

The first production-ready solutions are already available and are largely being used in the institutional environment. However, for broader scalability, the integration of additional asset classes, the standardisation of processes and the connection to existing market infrastructures are imperative. Tokenised deposits and stablecoins are particularly well suited as a means of payment, as they can be integrated into existing banking and settlement processes.



Target group

Businesses, banks and financial market participants (institutional investors)



Forms of money

Tokenised bank money and regulated stablecoins



Status

Fully operational (first live products based on tokenised deposits and with stablecoin solutions)

3.8 On-chain settlement in the digital asset ecosystem

With the increasing tokenisation of digital assets, there is a growing need for integrated solutions for the settlement of trading and collateral processes. In particular, to securely and efficiently process payments relating to the purchase, sale and collateralisation of digital assets.

Digital asset platforms based on tokenised deposits can be used by financial institutions, businesses, asset managers and stock exchanges to automate the settlement of digital asset trades and the management of collateral. They are used in particular for margin payments, in collateral management and in settlement processes. The tokens are transferred between wallets in real time to meet margin requirements, settle collateral obligations or directly settle transactions involving digital assets. All transactions are recorded on the blockchain and are therefore transparent and traceable. Integration with existing banking and trading systems enables a seamless transfer between on-chain and off-chain holdings. This supports settlement processes in trading, derivatives trading, clearing and on trading platforms.

The first productive use cases for such digital asset platforms already exist in the US. Alongside reduced operational risks, shorter settlement times and greater transparency, institutional users benefit from robust compliance controls, direct integration with banking systems and the option of interest payments. Further integration of stock exchanges and trading platforms, as well as expansion to include currencies other than the US dollar, promises additional use cases. In the long term, automated on-chain settlement could become the standard for trading and settling digital assets, thereby further enhancing efficiency and security in the market.



Target group

Businesses as well as banks and the financial sector (i.a. asset managers, clearing houses and digital stock exchanges)



Forms of money

Tokenised bank money (including that issued on public blockchains); regulated stablecoins and wholesale CBDC (for financial institutions with access to central bank money) are potentially possible



Status

Operational on a trial basis (first successful transactions with institutional clients in the US, including integration into digital exchange infrastructures)

3.9 Real-time interbank settlements

Finality platform

The Sterling Finality Payment System is the first wholesale payment system to enable real-time processing and settlement between financial institutions using distributed ledger technology (DLT).

Settlement is implemented using digital representations of central bank money, i.e. funds that are actually held by central banks.

The ECB's Appia project

As part of its Appia project, the European Central Bank is investigating how DLT-based solutions can be integrated into the existing payment infrastructure in future, in order to speed up the settlement of interbank payments and securities transactions.

Banks process payments among themselves in order to settle trades, credit facilities and other financial transactions, and to manage their liquidity. In the interbank sector, however, settlement processes are often still subject to delays and involve tying up significant amounts of liquidity, as transactions cannot always be settled in real time. Financial institutions must therefore either hold liquidity or wait for transactions to be concluded, which leads to increased capital commitment and additional counterparty risks.

DLT-based systems enable transactions to be processed using digital representations of central bank money. Payments can be made almost in real time and with immediate finality. This reduces traditional delays in interbank settlement and minimises settlement and counterparty risks. At the same time, the settlement infrastructure can be made available for considerably longer hours, or even on an almost continuous basis. This is particularly relevant for high-volume and time-sensitive transactions such as repos, margin calls and securities transactions.

A system of this kind could support payment settlements on a 'payment-versus-payment' (PvP) basis and, in future, could also form the basis for the settlement of tokenised assets on a 'delivery-versus-payment' (DvP) basis. This will enable payment and securities transactions to be more closely integrated and further reduce settlement risks.

Early initiatives and pilot projects are already in place, particularly for tokenised central bank money and hybrid settlement models. However, for widespread implementation, particular attention must be paid to issues of interoperability, integration into existing market infrastructures and regulatory and monetary policy frameworks. Of particular relevance here are forms of tokenised central bank money or comparable settlement mechanisms closely linked to central banks.



Target group

Banks and the financial economy (financial institutions with central bank accounts)



Forms of money

Wholesale CBDC (e.g. as a tokenised representation of central bank balances); tokenised bank money and regulated stablecoins are also conceivable alternatives



Status

Operational on a trial basis (already live in the UK for PvP; infrastructure in other regions is under development)

3.10 Cross-border payments between banks

The Bank for International Settlements' **Project Agorá** is an initiative involving seven central banks and 40 financial institutions, aimed at developing a shared, programmable infrastructure (unified ledger) to enable the integrated processing of tokenised central bank and commercial bank money. The focus here is on a fundamental redesigning of the settlement architecture.

DLT-based, shared infrastructures enable the integrated settlement of cross-border payments, with payment, compliance and settlement processes becoming more closely interlinked. Transactions can be settled directly between the banks involved, without the need for a large number of intermediary correspondent banks. The integration of compliance logic into the settlement process enables regulatory requirements to be checked at an early stage, thereby reducing delays and increasing transparency on the status of payments.

Current initiatives looking at internationally coordinated projects aimed at further developing cross-border payment infrastructures – such as Project Agorá by the Bank for International Settlements (BIS) – are pursuing approaches that bring central bank money and commercial bank deposits together on shared platforms in order to integrate the processing of payments and currency conversions. The aim is to consolidate payment, compliance and settlement processes within a shared, programmable infrastructure (unified ledger) and gradually transition them to continuous real-time processing. In this way, processes that were previously sequential and partly manual can be automated, thereby reducing structural inefficiencies in cross-border payments.

This use case is currently in the pilot and development phase. Regulatory harmonisation and international governance structures are particularly important for further development. In addition to the technical feasibility of the unified ledger concept, significant progress depends on the development of a common legal and regulatory framework.



Target group

Banks and the financial economy (central banks and regulated financial institutions involved in international payments)



Forms of money

Wholesale CBDC; tokenised bank money and regulated stablecoins are conceivable in future



Status

Prototype (Agorá public-private pilot project, which is being tested as part of the ECB's Appia project; Production still under development)

4 Which form of money for which use case?

The use cases described in Chapter 3 illustrate that tokenised forms of money must meet different requirements. Depending on the context, requirements vary in particular in terms of accessibility, programmability, regulatory compliance, stability, interoperability and integration into existing financial and settlement systems.

Against this background, it is not possible to identify a single form of money that is equally suitable for all purposes. Rather, it is clear that the suitability of a particular form of money depends largely on the specific context in which it is used.

Stablecoins are already at a relatively advanced stage of development and are used particularly in areas where open access, global availability and easy integration into digital ecosystems are required. This applies, for example, to access to stable currencies, to certain applications within the digital asset ecosystem or to the first forms of automated payments. At the same time, their potential uses are limited by inconsistent regulatory requirements, as well as issues relating to stability and governance.

Tokenised deposits (commercial bank deposit tokens) offer particular advantages for business applications and financial market processes. They can be closely integrated into existing banking infrastructures, enable programmable payments and support complex settlement logic, for example in supply chain finance, treasury management or digital asset settlement. However, the use of tokenised deposits is currently often limited to individual banks or networks, and their widespread availability is still in the early stages.

Forms of digital central bank money, particularly in the wholesale sector, are primarily designed to address use cases between regulated financial market participants. They offer the potential for particularly secure and final settlements without counterparty risk, for example in interbank transactions or in the settlement of securities transactions. At the same time, many of these concepts are still at the development or pilot stage, meaning that their practical availability is currently limited.

A comparison of the use cases also shows that requirements are shifting from open, user-oriented applications to highly regulated financial market processes. While early use cases focus primarily on accessibility, simplicity and global usability, later use cases place greater emphasis on aspects such as regulatory compliance, integration into existing systems, liquidity management and minimising risk.

This results in complementary interplay between the various tokenised forms of money. Stablecoins, tokenised deposits and forms of digital central bank money each cater to different segments and requirements, but in many cases, they can complement one another.

At the same time, all the forms of money under consideration here continue to be in a state of dynamic development. Technological advances, regulatory changes and shifts in market structures and user behaviour will have a significant impact on their

future roles. The assessment of the suitability of individual forms of money therefore represents a momentary snapshot and is subject to a degree of uncertainty.

The table below provides an up-to-date overview of the forms of tokenised money that are already being used for the use cases discussed in Chapter 3 or are being tested in pilot projects. Furthermore, it highlights which other forms of money, based on current knowledge, could potentially be relevant for these use cases.

Use case	Wholesale CBDC	Tokenised bank money	Stablecoin (e-money token)
1 Access to stable currencies			currently in use or planned
2 Autonomous payments through AI-agents		currently in use or planned	currently in use or planned
3 Automated financing in supply chains		currently in use or planned	possible use
4 Event-based and autonomous payment settlement in production and logistics		currently in use or planned	currently in use or planned
5 Real-time liquidity and currency management for businesses		currently in use or planned	possible use
6 Interest on tokenised money with high liquidity	possible use	currently in use or planned	currently in use or planned
7 Automated short-term liquidity management and refinancing (intraday repo)		currently in use or planned	currently in use or planned
8 On-chain settlement in the digital asset ecosystem	possible use	currently in use or planned	possible use
9 Real-time interbank settlements	currently in use or planned	possible use	possible use
10 Cross-border payments between banks	currently in use or planned	possible use	possible use

Legend:  currently in use or planned
 possible use

Figure 3: Overview of use cases and relevant tokenised forms of money

5 Glossary

Central bank digital currency (CBDC)	A digital form of official currency issued directly by a central bank, which, depending on its design, can be used by financial institutions or the general public for payments and as a store of value.
Commercial bank deposit/money token (CBMT)	A digital form of commercial bank money or scriptural money that is made available via distributed ledger technologies and enables the settlement of programmable payments.
Delivery versus payment (DvP)	Settlement mechanism in which the provision of an asset only occurs if payment is made at the same time.
Distributed ledger technology (DLT)	Digital database technology without a central authority. Transactions and information are distributed across multiple nodes in a network, stored in a synchronised manner and secured using cryptography (e.g. on a blockchain).
E-money token (EMT)	A digital representation of e-money based on distributed ledger technology (DLT), the value of which is kept stable by pegging it to a legal tender and by meeting corresponding reserve requirements. E-money tokens are regulated in the EU under MiCAR and constitute a specific type of stablecoin.
Electronic Banking Internet Communication Standard (EBICS)	A standardised communication protocol for the secure exchange of data between businesses and banks, particularly in the context of payment transactions.

Fiat currency	A currency whose money (fiat money) has no intrinsic value and whose acceptance is based on a government designating it as such and trust.
Foreign exchange (FX)	Currency trading (on the foreign exchange market), in which one currency is exchanged for another.
Internet of Things (IoT)	A network of physical devices (e.g. sensors, machines) that are connected via the internet and exchange data.
Payment versus payment (PvP)	A mechanism in foreign exchange trading whereby two payments in different currencies are settled simultaneously in order to mitigate risk.
Smart contract	A programme that automatically performs actions such as payments, transfers or other process steps when specified conditions are met.
Token	A digital representation of value or rights that is stored on distributed ledger or blockchain technology (DLT) and can be transferred electronically.
Tokenised market money fund (TMMF)	A money market fund whose units are issued and traded digitally as tokens.
Wholesale CBDC	A type of CBDC that is accessible only to financial institutions (e.g. banks) and is primarily used for interbank payments and financial market transactions.

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