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The Payments Professional Magazine from SIX — #11 — 2023

Start of Pilot Operation with Central Bank Digital Currency —  
Visiting the Swiss Association for Fiduciary Professionals —  
New Liquidity Assistance Loan — Impasse over Transatlantic  
Data Exchange — Structured Address a Done Deal



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# Pilot Project with Central Bank Digital Currency Launched

TEXT

BENJAMIN MÜLLER, PHILIPP MÜLLER AND FABIO WIESER,  
SWISS NATIONAL BANK

**D**istributed ledger technology (DLT) and asset tokenization – the representation of assets on a distributed ledger – are increasingly being used in the regulated financial sector. Examples include trading platforms, securities settlement systems, and payment systems. Among other things, the DLT allows the securitization of assets such as securities or money in the form of digital tokens on a common platform. The new technology promises efficiency and transparency gains, especially in post-trade, i.e., in the settlement, reconciliation, management, and administration of assets.

One important question is how to minimize settlement and credit risks in transactions involving tokenized securities (token transactions). To answer this question, it is worth taking a look at how securities transactions are settled in Switzerland today. When a bank buys a

security from another bank – for its own account or for the account of its customer – the transfer of money and securities takes place on the settlement date according to the principle of “delivery versus payment” (DvP). The securities are only delivered when the money is credited to the seller (and vice versa). This avoids settlement risks. Since payment is usually made in the SIC system and thus in central bank money, the credit risks are also minimized.

In the case of token transactions, the question arises as to how they can be settled according to the DvP principle and in central bank money. The Swiss National Bank (SNB) has been working on this issue for some time as part of Project Helvetia. One approach being investigated is the issuance of digital central bank currency on a DLT platform. In the first two phases of the project, the SNB conducted successful feasibility studies in test systems. The SIX Digital Exchange (SDX) platform, a DLT-based financial market infrastructure for trading, settlement, and custody of tokenized securities, served as the test environment.

In the recently launched third phase, the SNB is issuing real central bank digital currency in Swiss francs on SDX as part of a pilot project. As of December 1, 2023, the pilot banks – the cantonal banks of Vaud, Basel, and Zurich, as well as Commerzbank, Hypothekarbank Lenzburg, and



# The pilot enables integrated settlement of transactions with tokenized bonds on SDX in a Swiss franc-wholesale CBDC.

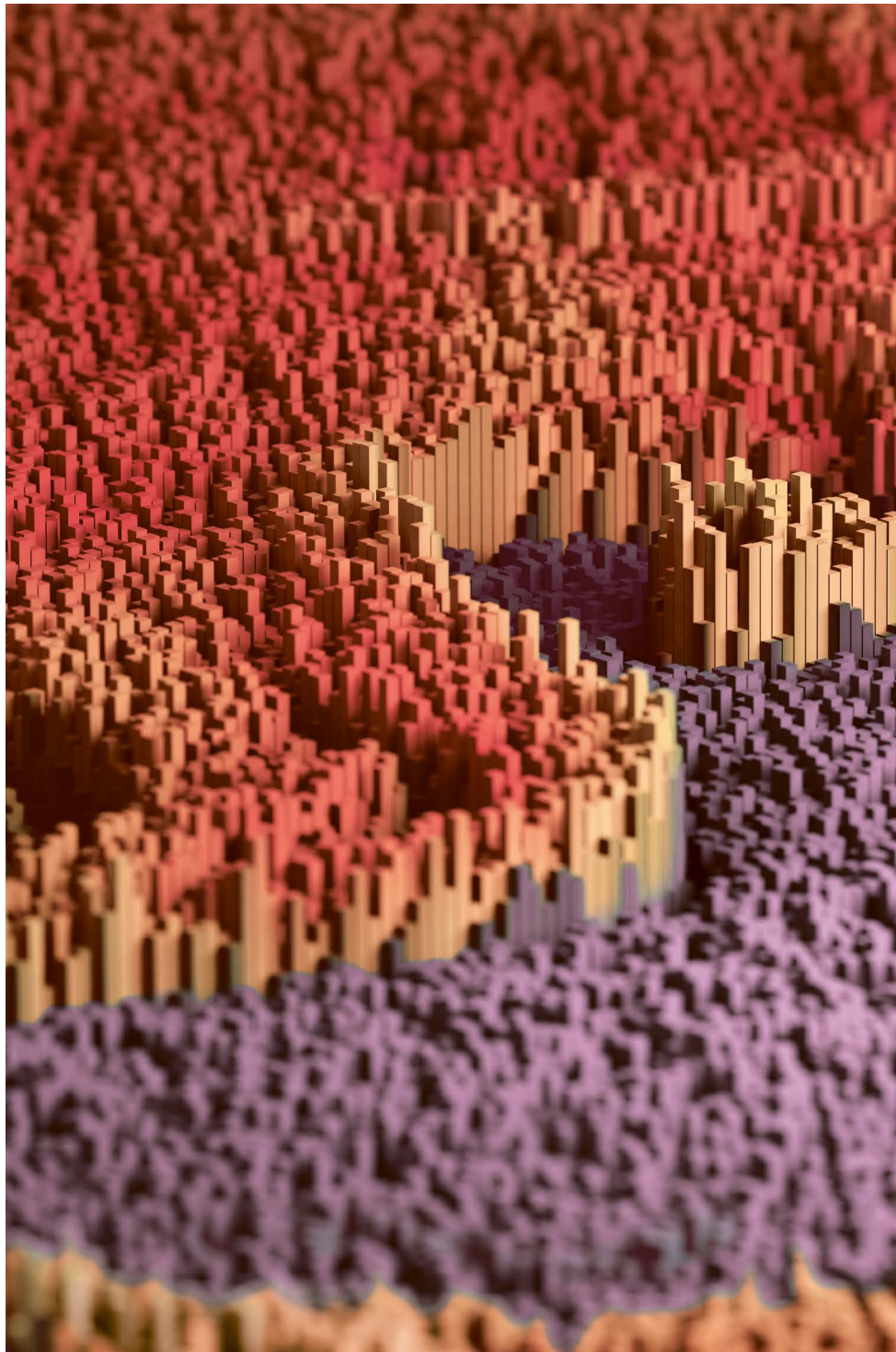
UBS – will be able to settle certain transactions in central bank money instead of private token money. Banks are expected to issue several digital bonds on SDX and settle them with central bank digital currency during the pilot operation. The pilot will run until mid-2024. Other Swiss financial market infrastructures involved are SIC, SIX SIS, and SIX Repo.

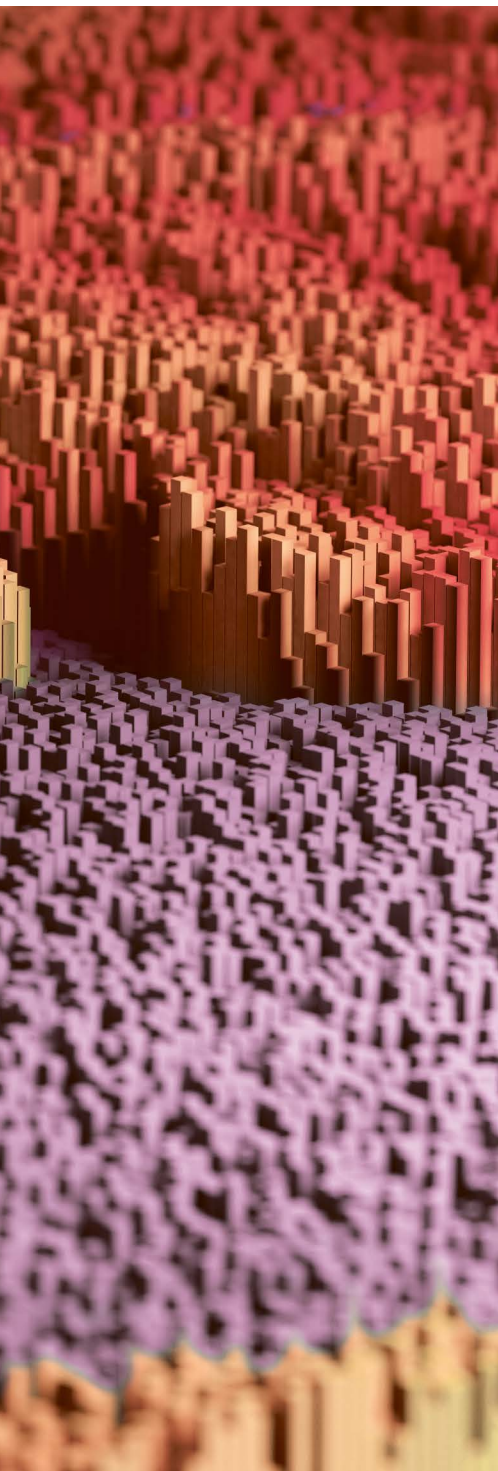
## Corner Stones of the Pilot

The central bank digital currency as tested in the Helvetia pilot is a tokenized form of sight deposits, referred to as a wholesale central bank digital currency (wCBDC). This is an alternative technical representation of sight deposits represented on a DLT infrastructure. wCBDC represents another exchangeable claim on the SNB, in addition to sight deposit accounts and on SIC settlement accounts.

During the pilot phase, wCBDC will be available to pilot banks on selected days. Banks can convert part of their balances on their SIC settlement accounts into wCBDC. A pilot bank triggers the tokenization process by making a payment to a technical account of the SNB in the SIC system. The SNB then credits the bank with the deposited amount in the form of wCBDC on SDX. At the end of the day, all wCBDC balances must be converted back into balances on the SIC settlement account through the de-tokenization process.

Pilot banks can use wCBDC to settle token transactions according to the DvP principle. Two types of transactions are possible in the pilot: the settlement of bond issuances in the primary market and the settlement of bond transactions in the secondary market. The latter takes place across infrastructures thanks to a link between SDX and the national central securities depository SIX SIS: Payment





is made in wCBDC via SDX and delivery of the securities to the buyer via the SECOM system of SIX SIS. This connection makes the tokenized bond universe accessible to all SIX SIS customers. It can thus help to prevent fragmentation of the Swiss franc bond market and, ultimately, of central bank money.

A key focus in the preparation of the pilot was the implementation of the SNB's control and monitoring functionalities for wCBDC. These functionalities ensure the SNB's control over wCBDC at all times and are thus a basic prerequisite for its issuance. An important control function is the ability to prevent settlement activities in wCBDC for individual or all participants. In addition, the SNB is granted certain inspection rights on SDX in order to be able to view the wCBDC balances of individual participants at any time. It is also important to ensure that intervention procedures are defined and tested, for example in the event of possible misuse by a participant or a malfunction of the system.

Preparations for the pilot started in January 2023, and the onboarding of the pilot banks began in spring. Around 20 employees from the SNB and SIX Group companies form the core team, which is made up of interdisciplinary experts from the fields of IT, economics, and law. Additional representatives from the pilot banks joined the team in spring.

Two Other Approaches to Settling Token Transactions

In addition to the wCBDC, the SNB is investigating two other approaches for the settlement of the cash-leg of wholesale token transactions: a "link" of token settle-

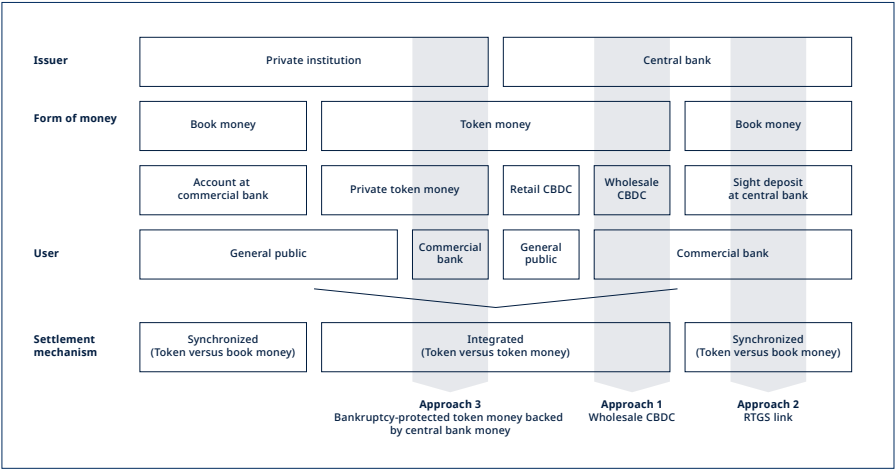
ment systems to the SIC system and the use of private, bankruptcy-protected token money that is backed by central bank money.

The three approaches can be defined in terms of three characteristics – namely, the issuer, the form of money, and the user base – and the settlement mechanism. The issuer can be either a central bank, i.e., the SNB in Switzerland, or a private institution. With regard to the form of money, a distinction is made between conventional book money and token money; with regard to the group of users, a distinction is made between the general public (retail) and commercial banks or other financial intermediaries (wholesale); and with regard to the settlement mechanism, a distinction is made between integrated and synchronized settlement. Integrated settlement means that money and other assets can be transferred on the same infrastructure. This is the case in the current pilot with wCBDC on SDX. In case of synchronized settlement, the settlement is done across different infrastructures.

The second approach, the RTGS link, involves the synchronized settlement of token transactions via a link to the RTGS system, i.e., the SIC system in Switzerland. Here, the settlement of the transactions' cash-leg takes place in book money and not in token money. The issuer and user base are the same as for wCBDC (central bank and commercial banks, respectively).

The third approach, bankruptcy-protected private token money backed by central bank money, differs from wCBDC

Three approaches to secure and efficient token-transactions

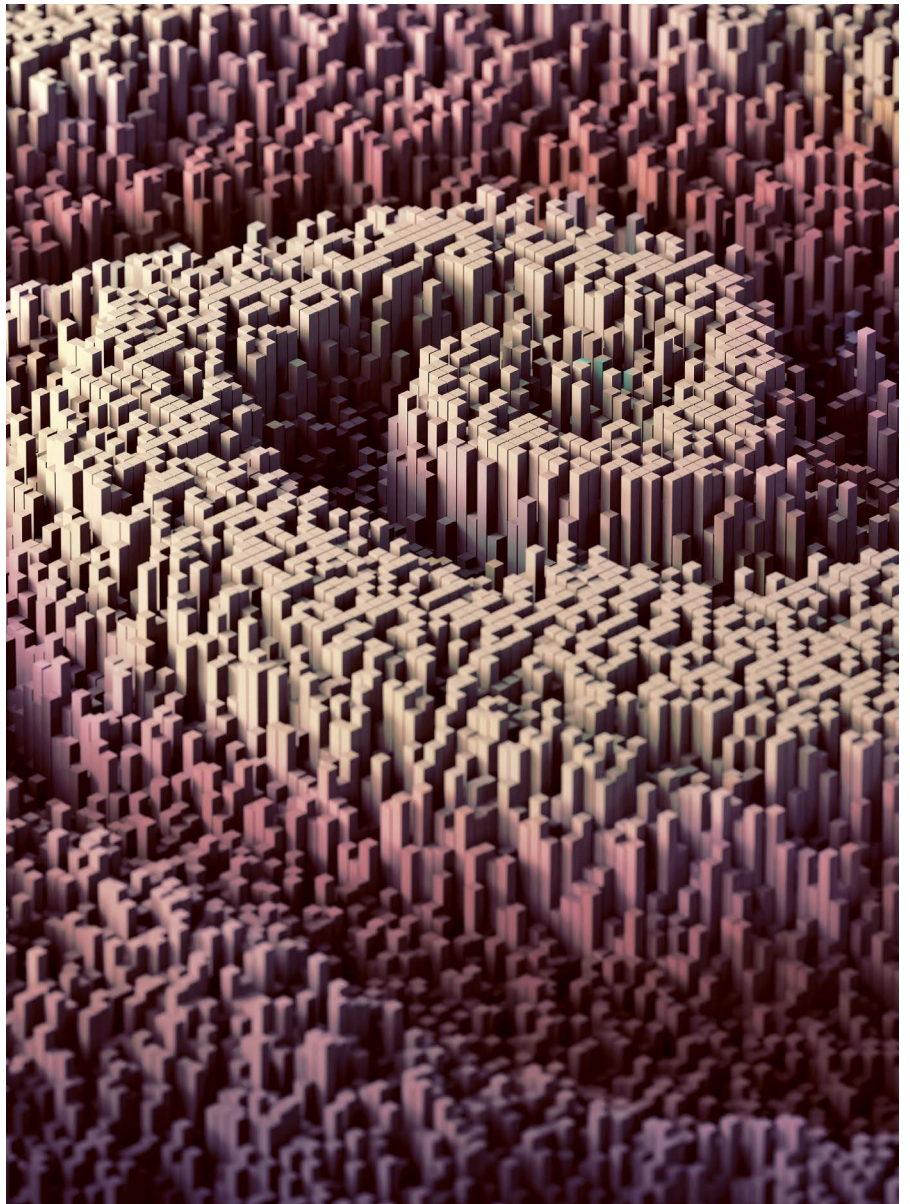




only in terms of the issuer. Like wCBDC, it is targeted at commercial banks, is tokenized, and allows for integrated settlement. The difference is that it is issued by a private institution.

### Keeping the Mandate in Mind

The SNB is generally open to innovative technologies and interested in further minimizing settlement risks and increasing efficiency. The ongoing work on asset tokenization should not be seen as a declaration of intent that the SNB will issue wCBDC or offer other settlement approaches. Rather, it is about acting prudently and with foresight to ensure that the SNB can continue to fulfill its mandate in the future. The SNB will inform in due time on the findings of this work. 🏞️



### Technology and New Needs Drive Change in the Financial System

In addition to the settlement of token transactions, the SNB is also exploring other aspects of how it can exploit the potential of modern technologies in cashless payments and meet changing customer needs. With the migration of the SIC system to the new technical platform (SIC5), the Swiss financial center has created the technical prerequisites by end of November 2023 for processing customer transactions in real time (instant payments), thus meeting the needs of end customers for faster payment processing.

As part of the BIS Innovation Hub (BISIH), the SNB also actively tracks and shapes potential future developments in payments. Project Tourbillon demon-

strated that with a CBDC it is possible to protect the privacy of the payer (both vis-à-vis the central bank and vis-à-vis the beneficiary) while fully complying with anti-money laundering legislation. In Project Mariana, the SNB, together with other central banks, successfully tested the trading and settlement of foreign exchange transactions in wCBDC on a blockchain. The entire financial sector benefits from findings of such projects. The SNB will report on the findings in due time.



# Private Token Money from a Legal Perspective

FUTURE TALK WITH PROF. CORNELIA STENGEL,  
ATTORNEY AT LAW FOR FINANCIAL MARKET  
AND DATA PROTECTION AND PARTNER AT  
KELLERHALS CARRARD

**The Swiss National Bank has just launched the pilot operation of token money for interbank transactions (wCBDC). What are the biggest legal challenges for the introduction of private token money in Switzerland?**

In terms of civil law, the main issue is probably the clarification of the legal form and qualification. In particular, a distinction must be drawn between two different transfer systems. On the one hand, there is the traditional instruction system with intermediaries, in which, for example, the payer instructs their bank to make an entry in favor of the beneficiary. On the other hand, there is the direct transfer of digital assets between the payer and the beneficiary, made possible by the distributed ledger technology (DLT) legislation.

Closely related to this are questions of financial market law, such as whether token money can or should be qualified as securities.

In addition, questions of monetary law must be answered, such as the possible status of legal tender, access, or the functions of private token money.

Finally, questions of personal data protection and informational self-determination must be examined early in the conception phase. These, in turn, are partly related to financial market legislation, in particular legislation against money laundering and terrorist financing.

**How would the real economy benefit from the introduction of token money?**

Token money could circulate quickly and directly between participating businesses or their customers. This could reduce transaction costs and increase efficiency. Future business models will increasingly be based on the purchase of services, some of which will be triggered directly by the machines used (Internet of Things) and paid for with very small amounts. Especially in the case of digital services such as music or video streaming, token money can solve challenges such as micro-denomination, transaction costs and the complexity of invoicing and payment management.

**What are the advantages of token money for securities trading?**

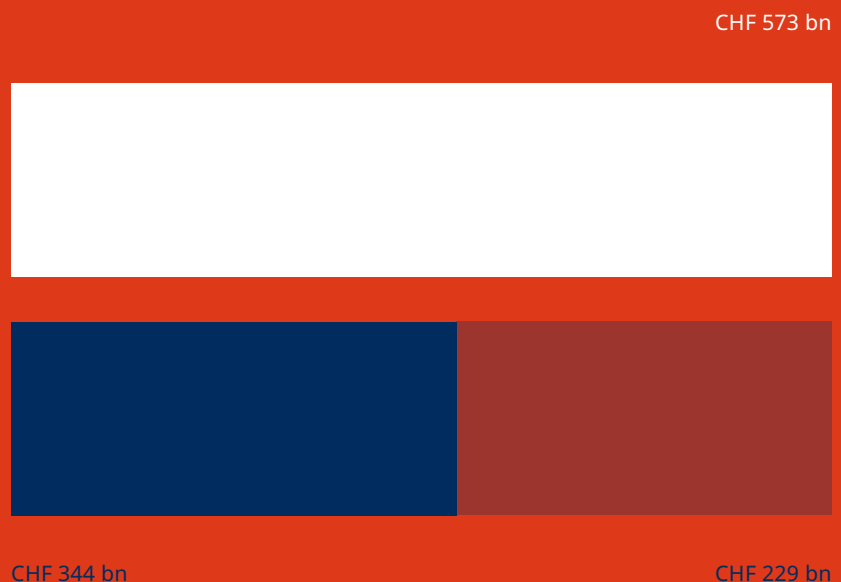
With its DLT legislation, Switzerland has laid the foundation for the direct and efficient trading of all types of financial assets as so-called digital assets. However, the cash leg, i.e., the token money for the payment of these assets in the same transaction, is still missing. In this context, it is also worth thinking about the execution of corporate actions, such as the payment of dividends on shares, which could be fully automated and in real time – i.e., not two days apart, as is the case today. Ultimately, the introduction of token money is a question of infrastructure and Switzerland's national sovereignty in payment traffic.

Rapid provision of liquidity to all Swiss banks in the event of a crisis thanks to the digitization of the land registry business. At the end of 2023, the maximum liquidity potential of mortgage collateral will exceed CHF 570 billion in nominal value.

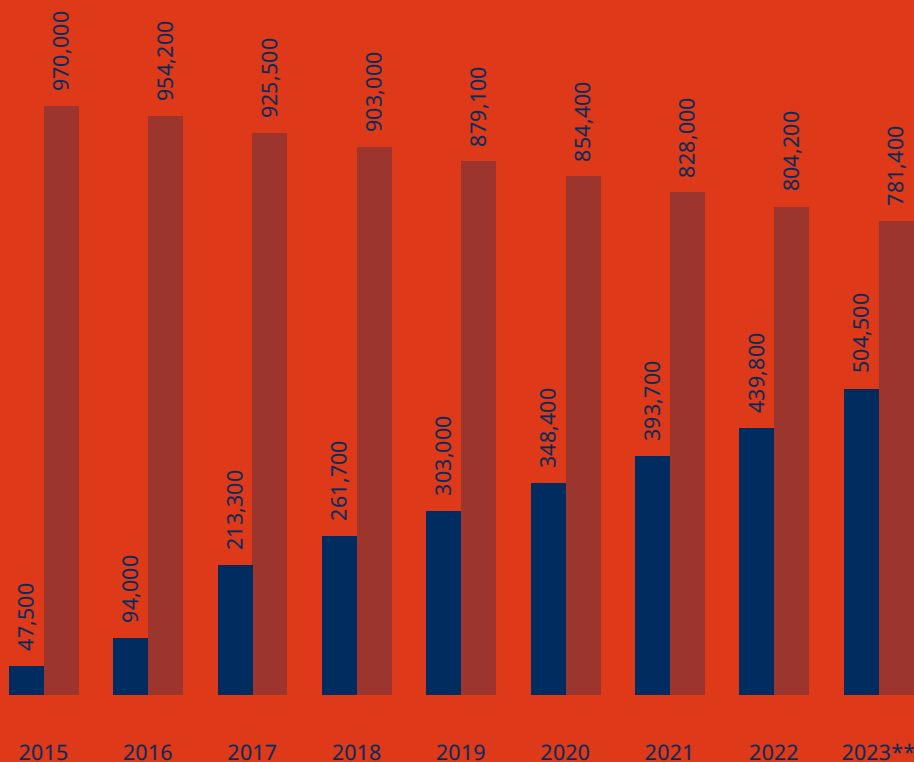
### The potential

For new liquidity assistance loan, the Swiss National Bank only accepts electronic mortgage notes as collateral, with a risk haircut deducted from the mortgage value. The possibility of converting paper notes at the banks not yet processed by SIX into electronic notes and their transfer to SIX Terravis as the central hub opens up additional liquidity potential.

- Total
- Electronic notes at SIX Terravis for liquidity assistance
- Paper notes at the banks







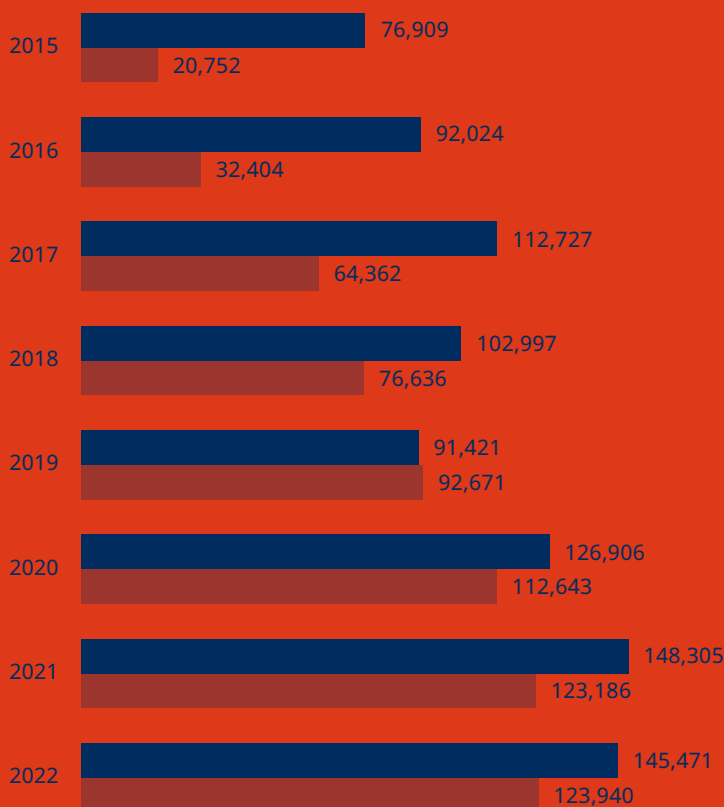
## Evolution of the two types of liens

Since the partial revision of the Federal Land Registry and Real Estate Law in 2012, electronic mortgage notes have been available. Meanwhile, the number and value of this type of lien has steadily increased compared to paper mortgage notes. As of this year, all financial institutions in Switzerland can benefit from this liquidity assistance loan from the National Bank.

- Number of electronic notes\*
- Number of paper notes\*

\*managed by SIX

\*\*estimate



## Development of transactions for paper and electronic mortgage notes

The number of business transactions triggered by, e.g., debt certificate mutations or changes in ownership, is increasing significantly.\*

- Number of transactions (electronic notes)
- Number of transactions (paper notes)

\*It should be noted here that the figures for paper and registered notes include a certain amount of double counting. Paper note transaction types are customer orders without transfers and without pledges.

# "Without Fiduciaries, We Would Be Stuck"

VISITING VANESSA JENNI, MANAGING DIRECTOR OF TREUHAND SUISSE

TEXT  
SIMON BRUNNER



It's a short walk from Bern's main train station to the

Monbijou district, named after a baroque country estate ("my jewel"). Far and wide there are no farms to be seen – but in a few minutes they will be.

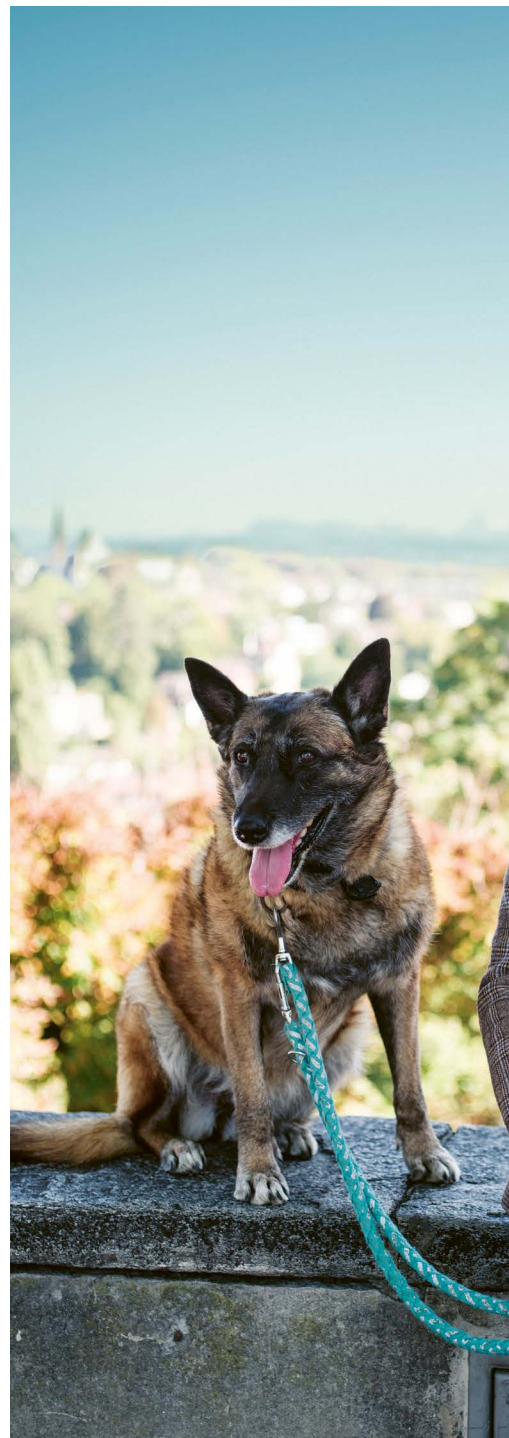
Through an inconspicuous door we enter a stately old building and climb a narrow staircase. There we are greeted by Vanessa Jenni, Managing Director of Treuhand Suisse. She studied agronomy and lives on a farm, but is quick to tell us, "My husband runs the farm – I only help out on weekends." She adds, "Although I run the association, we have a trustee – without him we would be stuck. Like almost any other business in the world."

Sporting yellow socks, Crocs, and a short-sleeved shirt, Vanessa Jenni leads us into a huge meeting room that could easily hold two ping-pong tables. We're here to talk about the fiduciary industry; the association wants to position its members more as coaches to small businesses. "During the Covid-19

pandemic, we were struck by the importance of our advisory role," she says. "When the guidelines for government assistance changed from week to week, companies simply didn't have the ability to keep up." But even when it's "business as usual", the trustees are often management's first port of call when the going gets tough.

Trustees also see themselves as input providers: Especially when it comes to digitization, they are usually further ahead than their client companies and can give them valuable advice, according to Vanessa Jenni. Of course, "there are still companies that come to the trustee's office with boxes full of paper," she says, so the industry needs to be accessible to all customers.

What's true for document storage is also true for payments. "Our members tend to be very tech-savvy and embrace digitization," Vanessa Jenni says, adding, "they were quick to adopt the QR-bill, they've been using eBill since day one, and they're aware of instant payments." But typical fiduciary clients – carpentry shops, hair salons,







physical therapy practices – are more skeptical of new technology, she reveals. “I understand that,” Vanessa Jenni says, “because payments typically have little to do with their core business.”

On the flip chart in the XXL meeting room are children’s drawings – “My daughters were in here the other day,” Vanessa Jenni says. But the little ones are not too impressed with their mother’s office: It’s much more exciting to be on the farm with dad. And no wonder: In addition to farm animals, vegetable plots, and fruit trees, there is a fish farm and – most thrillingly – a horse stable. The latter is part of their mother’s job: She is not only a passionate rider and breeder, but also an equestrian scientist and director of Vereinigung Pferd, the Swiss horse association.

What else keeps this horse whisperer busy? Vanessa Jenni immediately starts talking about the lack of qualified personnel. “Personnel in the fiduciary sector in Switzerland are at least as scarce as in the nursing sector or in schools,” she says. “Most members of our association are so overworked that they’re generally not taking on any new mandates.” Accordingly, Treuhand Suisse runs programs for career changers. “Recently, a pharmacist called me and wanted to know more about our profession,” Vanessa Jenni

says. “At first I was a little surprised, but I quickly realized how well she had already trained and informed herself. And dealing with customers is in her blood anyway.” She gives us the commercial pitch: “The job of a fiduciary is very varied, you get to look inside companies, and the salary is a real plus.”

Seven people work at the Treuhand Suisse office, and the association represents 4,000 individual and corporate members who work primarily for SMEs and private individuals. Vanessa Jenni herself has no fiduciary training. She came to Treuhand Suisse by chance. Before going to college, she worked at the Federal Office for Migration and Refugees and knew the in-house lawyer well. When he joined the association years later, he contacted her and convinced her to make the change. “The fact that I’m not a trustee is not a problem,” she reveals. “I don’t have to do the accounting, I have to run the association.” Laughing, she admits that she doesn’t use eBill yet (“I must get round to it!”) and that she collects paper invoices from her farm (“How embarrassing!”).

It’s getting late at Monbijou. Vanessa Jenni says goodbye; she has to leave because she’s giving two more riding lessons tonight. “And then, if I feel like it, I’ll get on a horse myself and ride off into the sunset.” 🐾



The new generation of debit cards, Debit Mastercard and Visa Debit, has successfully established itself in the Swiss market. The major issuing banks, Viseca and SIX, have founded the association “SwissDebitPay” as a counterpart to the Swiss Payment Association (SPA, for credit cards) in order to effectively represent the interests of the card-issuing banks vis-à-vis political decision-makers, retailers, the media, and the public.

## New Liquidity Assistance Loan from the SNB

The Swiss National Bank (SNB) has various monetary policy instruments at its disposal to manage the liquidity banks in Switzerland. These include repo transactions, the intraday facility, and the Emergency Liquidity Assistance (ELA), which involve covering cash amounts to banks with securities. For some time now, the SNB has been able to provide liquidity to systemically important banks in Switzerland against mortgage collateral. In the event of a crisis, the SNB can now provide liquidity to any bank at very short notice by taking over mortgages and the associated electronic mortgage notes (see also pages 8 and 9).



More information

## Technology Trends and Business Models in Banking – New Whitepaper

What do the trends open banking, embedded finance, and banking-as-a-service mean for the value chain of banks? The new whitepaper from SIX sheds light on emerging business models and their significance for the competitiveness of the Swiss financial center using practical examples.



More information



Near the Ukrainian village of Parutyne on the Black Sea was the ancient Greek colonial city of Olbia, where the dolphin was a symbol of seafaring and trade. Dolphin money was the local currency from 440 to 360 BCE. It was used as an offering, for journeys to the other world, and for trade – from food to luxury goods. 4.23 grams of bronze could buy 1.25 liters of olive oil.



# 1.25

- In-depth knowledge of end-to-end payment processing
- Basic insights into payment validation processes

go and do not end up in the hands of fraudsters or in the wrong account due to input errors. The service and its name originate from the British banking sector.

When a debtor wishes to transfer a payment (Figure 1), it is prompted to enter the beneficiary's name and account number. CoP compares the name entered with the name on file with the beneficiary bank. Based on this verification, the debtor will receive one of the following responses:

- a) full match
- b) partial match
- c) no match
- d) verification not possible

## Why Is CoP Important?

- **Protection against fraud** CoP is an effective measure against fraud, for example when criminals have swapped IBANs in otherwise legitimate payment requests.
- **Error prevention** Even small typos can

- **Increased confidence** Knowing that there is an additional layer of security increases customer confidence in online payments, especially instant payments.

While CoP is already widespread in the UK, the path to a standardized European IBAN/name validation approach is not yet complete. The EU Commission's proposed directive, also known as the Payment Services Regulation (PSR), requires payment service providers (PSPs) to implement a CoP service within a specified period after the legislation comes into force. The main concerns of PSPs regarding the proposed regulation are as follows:

- Figure 1: IBAN and name verification



- Implementation costs are high.
- To be effective, providers need to achieve cross-border reach across multiple standards and approaches.
- Long or complex beneficiary names may result in “no match” cases, even if the correct person is meant.

With the advent of instant payments, which allow instant transfers, CoP could become more important globally as the service further enhances the security of this fast payment method.

**PETER RUOSS**  
**PRODUCT OWNER PAYMENT SOFTWARE**  
**PARTNERS, UBS SWITZERLAND AG**

## CoP in Switzerland

The legal implications of CoP in the context of Swiss bank client confidentiality are currently being reviewed by the Legal Support Group SIC (LSG SIC) of the Payments Committee Switzerland (PaCoS). Depending on the outcome of the LSG SIC review, the introduction of CoP in Switzerland may be considered.

# Introduction of the Struc- tured Address Decided

### Required knowledge

- Knowledge of ISO 20022 standard
- Prior knowledge of address data storage

With the migration of the SEPA schemes to the new ISO 20022 message versions (V 2019) in March 2024, it is now finally possible for SEPA transactions to transmit the address of a payment participant in a “structured” way. While this may be new to many in the SEPA, it has long been part of everyday life in Swiss payment traffic at the customer-bank interface. Our banks have ensured that, depending on the network used, the address is either forwarded in a structured form (SIC RTGS, SWIFT CBPR+) or merged into two address lines. As a result of this approach, more than 75% of all addresses forwarded by payers are already structured in the SIC system. Many banks have already adapted their own systems such as online and mobile banking or their internal applications and require the address to be entered in structured form. It can therefore be assumed that the Swiss payment traffic can be converted without major problems by November 2025.

## New "Tolerance" in Switzerland

However, a closer look at the data shows that the separation of street name and house number can cause problems. This is for the simple reason that this separation is unusual outside of payment transactions. In an international context, this makes sense because there are different conventions for where the house number is placed – before or after the street name. This results in combinations that are difficult to interpret automatically – for example, 15 66th Street: does this mean house number 15 on 66th Street? In processing, the address is used almost exclusively for verification and control pur-

poses, whether for correct assignment, money laundering prevention, or sanctions control. None of this is a problem in Switzerland and Liechtenstein, where the structure of the address is uniformly regulated by law. For this reason, the Payments Committee Switzerland (PaCoS), as the standardization body for the Swiss Payment Standards (SPS), has decided to introduce the following tolerance in Switzerland: The house number may also appear in the “street name” element, provided the address is correct. This applies to all channels, e.g., pain.001. This is now also allowed for the structured QR-bill.

PaCoS has also decided to keep the current path for the customer-bank interface and to provide the structured address. In order to take into account the special circumstances of financial institutions with strong international operations and their clientele, the SPS will allow hybrid addresses as a banking offering. Its introduction will affect the receipt of payments and the message formats for credit and debit advice, account reports, and statements. However, bank customers will still have to deal with unstructured addresses, as not all postings originate from payment transactions.

## Compromise Abroad

Internationally, the situation is less clear. Only since the introduction of ISO 20022 messages in the Swift network for cross-border payments in March 2023 is it possible to transmit an address in a fully structured way. This means that most stakeholders are only now getting to grips with the issue and are finding that not all address systems in use around the world fit into the prescribed structure. And since, from a regulatory point of view, the town and country, i.e., the legally relevant domicile of a party, must be unambiguously declared, the following compromise now applies: One takes the structured elements as intended and allows the option of additionally entering the “address line” element twice if the information cannot be provided with another element. The specification of the town and country in the elements provided for this purpose is always mandatory. This compromise solution is based on the possibilities of the respective ISO

(in blue = mandatory fields)

```
<Cdt>
  <Nm>Hermann Escher</Nm>
  <PstlAdr>
    <StrtNm>Zähringerplatz</StrtNm>
    <BldgNb>99</BldgNb>
    <PstCd>8999</PstCd>
    <TwnNm>Seldwyla</TwnNm>
    <Ctry>CH</Ctry>
  </PstlAdr>
</Cdt>
```

(in blue = mandatory fields)

```
<Cdtr>
  <Nm>Hermann Escher</Nm>
  <PstlAdr>
    <StrtNm>Zähringerplatz 99</StrtNm>
    <PstCd>8999</PstCd>
    <TwnNm>Seldwyla</TwnNm>
    <Ctry>CH</Ctry>
  </PstlAdr>
</Cdtr>
```

(in blue = mandatory fields)

```
<Cdtr>
  <Nm>Hermann Escher</Nm>
  <PstlAdr>
    <PstCd>8999</PstCd>
    <TwnNm>Seldwyla</TwnNm>
    <Ctry>CH</Ctry>
    <AdrLine>Zähringerplatz 99</AdrLine>
  </PstlAdr>
</Cdtr>
```

20022 base messages and therefore only requires an adaptation of the business and validation rules. This new address type is called the “hybrid address”.

If a decision is made by the end of November 2023, Swift should introduce this address type for cross-border payments according to CBPR+ with the standard release in November 2025. Whether this will also be the case for SEPA schemes will be seen next year. Due to the close integration of the central Swiss infrastructure with the international banking business, it can be assumed that this adjustment will affect both the SIC system, in particular for forwarding (payments with a party abroad), and possibly also the services for SEPA payments. At the customer-bank interface for domestic payments,

the structured address applies, as mentioned above.

**MARTIN WALDER, HEAD BILLING & PAYMENTS STANDARDS, SIX**

# Many Hands, One Goal

### Required knowledge

- Knowledge of the processing of instant payments
- Basics of the interface and security architecture of the SIC system

The IP NEZplus cooperation project impressively demonstrates the synergy potential for cantonal banks. Eight banks are thus jointly implementing instant payment in Switzerland. Even though such a project is not immune to unexpected challenges, well-designed cooperation offers added value to all participants.

## Joint Venture and Value Creation

IP NEZplus is an extension of the NEZ (Neuer Zahlungsverkehr, New Payment Traffic) working group that has been in existence since 2014. In this group, the Swiss management consultancy PPI works regularly with the cantonal banks of Basel (including Bank Cler), Aargau, Thurgau, and St. Gallen on current payment topics. Baloise Bank and Luzerner Kantonalbank are also involved in the implementation of instant payment. This requires a new organizational structure. PPI orchestrates the community project, while some banks, such as the Cantonal Bank of St. Gallen, act as lead banks, making important clarifications, testing systems at an early stage, or reviewing supplier contracts for the community. This structure allows for efficient coordination and communication among stakeholders, and allows them to benefit from the experience of peer banks. Because the banks have very similar IT architectures and share organizational project efforts, the implementation project will be significantly less expensive for most participating banks than an independent implementation.

It goes without saying that the highly available component (Instant Payment Processor), and thus the technical and functional coordination with its manufacturer, is central to the implementation of instant payment. The IP Processor







## Biometrics as a Trump Card against Fraud?

Among the fastest growing sources of fraud, according to the US Federal Trade Commission, are payment apps. Losses have increased from 5 to 47 million US dollars since 2019. New trends in payments, such as instant payments, digital currencies, and machine-to-machine payments, pose additional challenges to fraud prevention. Experts predict that fraud risks associated with digital money will continue to grow and become more complex.

The financial industry is driving the adoption of behavioral biometrics to combat this growing threat. An international information solutions provider, in collaboration with a consulting firm, recently published a whitepaper that addresses the challenges of combating sophisticated fraud threats, especially

given the increase in digital usage and people's high expectations for online transaction security. The whitepaper highlights the increased use of P2P payment portals since the start of the Covid-19 pandemic. However, the survey also found that a proportion of respondents in the United States (10%), the United Kingdom (9%), and Singapore (7%) have reduced their use of P2P services or changed their behavior due to concerns about fraud.

### User's Behavior for Authentication

Fraud has become a pervasive and costly problem for companies. The increasing sophistication of fraudulent activities such as account takeover, identity theft and financial fraud has led to a strong demand for fraud prevention solutions.

Behavioral biometrics provides a dynamic approach to fraud detection and prevention, making it highly sought after by organizations looking to secure their business operations and protect their customers. Behavioral biometrics is a technology that uses data from a user's behavior for authentication. This is in contrast to physical biometrics, which evaluates human characteristics such as fingerprints or facial recognition – physically identifiable information. In cognitive biometrics, for example, sensors track people's behavior, studying how they use their devices and how they react during authentication processes. This data analysis can identify patterns that indicate whether a user is genuine or fraudulent.

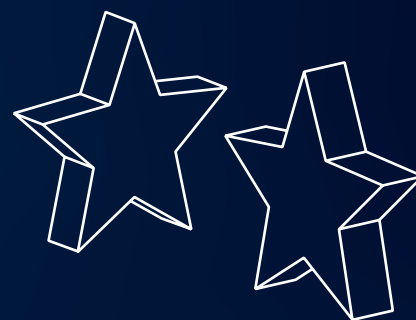
The authors of the whitepaper predict that the global market for behavioral biometrics will grow from an estimated 1.2 billion US dollars today to more than 9 billion US dollars by 2032.

**GABRIEL JURI**

#### FURTHER INFORMATION:



**WHITEPAPER MULTIFACETED  
FRAUD ATTACKS: BEHAVIORAL  
BIOMETRICS AS A DEFENSIVE TOOL**



## Europe – US: Legal Certainty for Data Flows?

On 10 July 2023, the European Commission adopted the agreement in principle on a transatlantic data protection framework reached between the EU and the US in March. This framework agreement became necessary after the European Court of Justice (ECJ) invalidated the previous one. In particular, the judges criticized the extensive access of the US intelligence services to personal data transferred to companies in the US.

The new agreement stipulates that the intelligence services may only access the data if it is necessary and proportionate to protect national security. A new court will ensure data protection and civil liberties standards in the event of complaints from Europeans. These protections also apply to data transfer instruments such as standard contractual clauses and internal company rules. US companies can participate in this data protection framework through a certification process if they comply with data protection obligations, including deletion of unnecessary data and data transfer safeguards.

### The Practice

Data transfers from the EU or EEA, including from Liechtenstein to the US, will become much easier in the future. Companies will no longer have to use standard contractual clauses to legally transfer data to the US, provided that the US company agrees to comply with detailed data protection rules. Companies will now be able to demonstrate compliance through a certification process.



## Hanging Game Continues

The same organization that won the ECJ ruling has indicated that it will also challenge the new privacy agreement in court. In its view, even the EU Commission's third attempt does not constitute a stable data transfer agreement because "fundamental" surveillance issues have not been sufficiently addressed. A French MEP has already filed a lawsuit on other grounds. The long-awaited legal certainty in data transfers with the US could therefore be short-lived.

## The Situation in Switzerland

In the case of data exchange between Switzerland and the US, the situation is similar to that between the EU and the US. Following the ECJ ruling, the Federal Data Protection and Information Commissioner (FDPIC) removed the US from the list of countries with an adequate level of data protection. Switzerland is currently negotiating its own data protection framework with the US, known as the Swiss-US Data Privacy Framework. Since the entry into force of the new Federal Data Protection Act on 1 September 2023, it has been the responsibility of the Federal Council to assess a country's adequacy under the Data Protection Act. Despite the agreement between the EU and the US and the possibility of confirmation of an adequate level of protection for certified US companies, the Swiss list of countries with an adequate level of protection will not change until the new framework is available. Personal data may therefore continue to be transferred to the US only with additional safeguards, such as the standard contractual clauses.

**IVICA KUZMIC, LIECHTENSTEIN BANKERS ASSOCIATION**

### FURTHER INFORMATION:



**EU COMMISSION AND US JOINT STATEMENT ON DATA PRIVACY FRAMEWORK**



# What Is the Future of the Smart Banknote?

Token money is a form of money based on distributed ledger technology (DLT). Like book money, token money can be issued by both private individuals and central banks. In the case of private issuers, they are referred to as stablecoins; in the case of central banks, they are called central bank digital currencies (CBDCs). The European Central Bank (ECB) launched the preparatory phase for a CBDC in the euro area, the digital euro, in mid-October 2023. Previous experiences with CBDCs circulating among the population in the Bahamas, Jamaica, and Nigeria have not been crowned with success. In Africa's most populous and economically powerful country, hardly anyone uses the currency. Resistance is fueled by a variety of arguments. The US Congress, for example, has banned the Federal Reserve from issuing a CBDC because it sees civil rights threatened by surveillance and control. The American Bankers Association, on the other hand, fears that the role of banks as financial intermediaries will be undermined. Finally, large segments of the population, especially in traditional "cash countries" such as Switzerland and Germany, simply do not want to give up banknotes.

## One Does Not Exclude the Other

Ideally, the two should go hand in hand: the physical banknote combined with its digital counterpart. In 2021, Swiss banknote manufacturer Orell Füssli demonstrated that this is technically possible by designing a hybrid form of money. This intelligent banknote feels like a normal one and also fulfills all the functions of the physical means of payment. At the same time, it can be transferred to a digital wallet at any time by scanning the QR code hidden under a scratch field with the private key. Once the smartphone has successfully authenticated the banknote, its value is stored in a blockchain and the bill is invalidated. Whether the physical banknote still has the printed value or is already registered as a digital asset can be determined by scanning the second QR code with the public key.

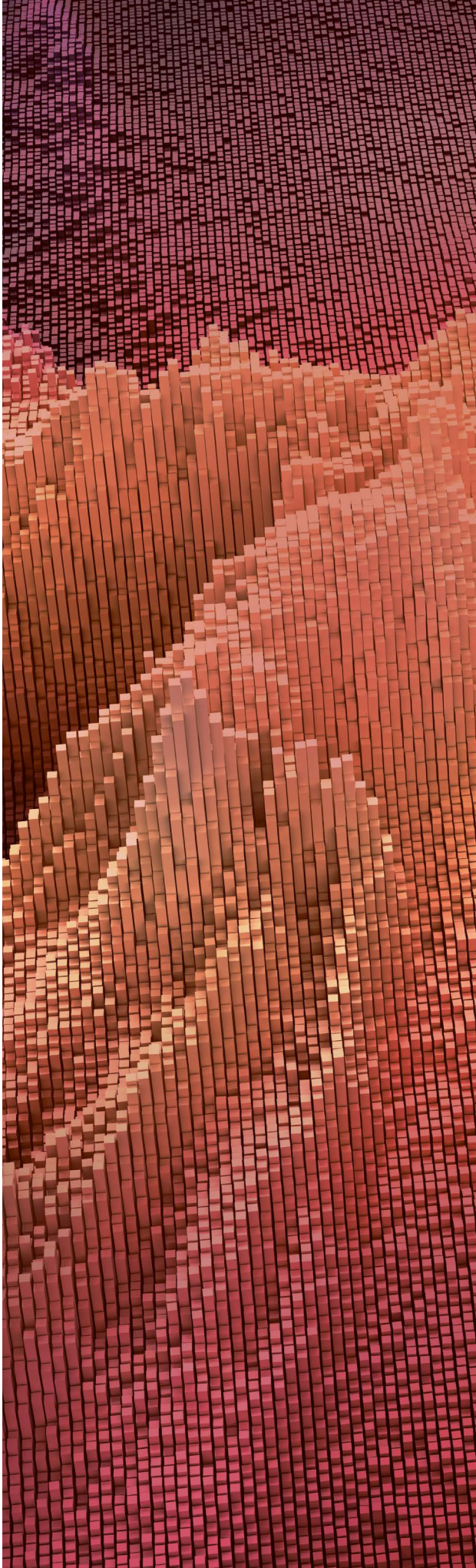
This option was raised in a May 2023 handbook on offline payments using CBDC published by the Bank for International Settlements as part of its Polaris project. A report by the Central Bank of Kenya, also published in May, summarizing the status of its CBDC discussions, including with countries such as the US, UK, Germany, and Switzerland, noted, "It was proposed that a smart bank note would serve the same purpose as CBDC without requiring similar resources". The Central Bank of Kenya concluded that this suggestion should be explored further. It remains to be seen whether other central banks will follow suit.

**GABRIEL JURI**

### FURTHER INFORMATION:



**PROJECT POLARIS: HANDBOOK FOR OFFLINE PAYMENTS WITH CBDC**



Where there are banknotes,  
there are always nice people.

Russian proverb