

JOURNAL

Game changer

Central banks reach faster for their digital currency plans

DMI

Digital Monetary Institute

30 Crown Place, London,
EC2A 4EB United Kingdom
T: +44 (0)20 3008 5262
F: +44 (0)20 7965 4489
omfif.org/dmi @OMFIF

John Orchard, *Chief Executive Officer*

Philip Middleton, *Deputy Chairman*

Bhavin Patel, *Senior Economist & Head of Fintech Research*

Julia Demidova, *DMI Project Manager*

Katie-Ann Wilson, *Head, DMI Programming*

Julie Levy-Abegnoli, *Subeditor*

William Coningsby-Brown, *Assistant Production Editor*

Strictly no photocopying is permitted. It is illegal to reproduce, store in a central retrieval system or transmit, electronically or otherwise, any of the content of this publication without the prior consent of the publisher. While every care is taken to provide accurate information, the publisher cannot accept liability for any errors or omissions. No responsibility will be accepted for any loss occurred by any individual acting or not acting as a result of any content in this publication. On any specific matter reference should be made to an appropriate adviser.

Company Number: 7032533.
ISSN: 2398-4236

**3****The meaning of money**

By John Orchard

4**News**

Including: Bank of England, Banque de France, People's Bank of China, and De Nederlandsche Bank

6**CBDC: The next payments frontier**

By Philip Middleton

7**Libra reinvents itself**

By Bhavin Patel

8**CBDC the preferred form of digital currency**

By Pierre Ortlieb

10**What's in it for me?**

By Philip Middleton

11**Crisis of disconnection**

By Kat Usita

12**Digital finance's sustainability dividend**

By Danae Kyriakopoulou

13**Low interest rates create digital finance opportunities**

By Chris Papadopoulos

14**Exporting Chinese payment technologies**

By Brandon Chye

15**A future society built on central bank digital currency**

By Wolfram Seidemann

The meaning of money

Central bank digital currency is the future of money, but before it can become a reality, many discussions are needed between the public and private sectors. The Digital Monetary Institute will facilitate these conversations, writes John Orchard, Chief Executive Officer, OMFIF.

WHAT is money? Textbooks talk of a stable, fungible and convenient medium of exchange and store of value. The idea persists for some that it should be rooted at least nominally in metal that our ancestors found hard to get. For the rest who don't stop to wonder what underpins its validity, it's a tremendously efficient belief system. The quality driving that faith, and the other characteristics besides, is trust. OMFIF undertook a major survey recently into retail attitudes to central banks, commercial banks and other payment providers as these institutions consider a tech-driven money revolution. While it is clear that cash is losing its relative convenience, we found pockets of apathy and even antipathy in developed markets toward the introduction of digital currency, especially from private sector institutions. Both state and private agents need to work to bring the public with them to trust this version of money. It is also not clear that the two sectors trust one another quite yet.

We are setting up OMFIF's Digital Monetary Institute to bring them together for useful conversations in an off-the-record setting, just as we do more broadly for monetary and macro policy, underpinned by regular commentary and research from our renowned team.

The DMI will examine all practical and theoretical aspects of

central bank digital currency. More broadly, we will also look at the application of distributed ledger technology to trade finance and transaction services.

The technical quickly becomes fundamental in this area: will the currency zone that is first able to implement digital currency then steal a geopolitical march on its rivals as the new money system percolates along global supply chains? How will consumers respond to privacy concerns? How would major currencies operating across the old and new formats interact and would people find a way to arbitrage the coexistence? Will CBDC smooth the path for more effective use of negative interest rates? And if so, will people vote with their feet, or rather mice, as 'store of value' worries offset 'convenience'? What will happen to commercial banks? Fractional reserve banking is one of the quiet wonders propping up the economy. Would CBDC have to work with it, or replace the whole structure? How will it be distributed to the unbanked who have now lost recourse cash? What impact will CBDC have on asset management, and asset servicing? Will CBDC provide a better transmission mechanism to fix economic emergencies such as the coronavirus crisis?

OMFIF looks forward, as always, to chairing these conversations on what money will be. •

The DMI will examine all practical and theoretical aspects of central bank digital currency. More broadly, we will also look at the application of DLT to trade finance and transaction services

Bank of England releases CBDC discussion paper

The Bank of England is exploring how CBDC could help it maintain monetary and financial stability and support 'a more resilient payments landscape.' The BoE is yet to make a decision on the launch of CBDC and intends to engage with stakeholders on the benefits, risks and practicalities of doing so.

Facebook releases its second Libra white paper

The Libra Association has updated its vision for the Libra cryptocurrency, following regulatory pushback and scrutiny of the project's first iteration. It plans to issue a series of stablecoins backed by a single asset each. Similar to the original concept, the Libra coin will be backed by a currency basket. Read more on p.7.



Banque de France experimentation programme

The Banque de France is calling for applications to experiment with the use of a digital euro for interbank settlements. The aim is to explore the technology's potential and identify concrete cases integrating central bank digital currency in innovative procedures for the clearing and settlement of tokenised financial assets.

US bill proposes using digital dollars and wallets

Shortly after US President Donald Trump signed into law a \$2tn economic stimulus package, a coronavirus bill proposal by Speaker of the House Nancy Pelosi leaked. It included the prospect of using digital wallets for fiscal transfers through digital dollars.

De Nederlandsche Bank supports digital currency

De Nederlandsche Bank has released a report outlining its views on CBDC. The bank believes digital currency offers significant benefits for citizens. In the report, DNB confirmed that it is 'ready to play a leading role' in research related to central bank digital currencies.

People's Bank of China trialling CBDC user interface

The Agricultural Bank of China is working on a front-end interface of how users could interact with the People's Bank of China's digital currency. Several sources verified a screenshot circulated on WeChat which showed an application being developed by the ABC.

FURTHER READING

A collection of research, reports and white papers from central banks and the industry over recent months, showing how the narrative is evolving in the payments sector. These documents outline current views on designs and experiments in digital currencies, as well as the concerns and challenges that lie ahead.

Central Bank Digital Currency: Opportunities, challenges and design

Bank of England, 12 March

<https://www.bankofengland.co.uk/paper/2020/central-bank-digital-currency-opportunities-challenges-and-design-discussion-paper>

Central Bank Digital Currency: Objectives, preconditions and design choices

De Nederlandsche Bank, 21 April

<https://www.dnb.nl/en/news/news-and-archive/dnbulletin-2020/dnb388309.jsp#>

Contingency Planning for a Central Bank Digital Currency

Bank of Canada, 25 February

<https://www.bankofcanada.ca/2020/02/contingency-planning-central-bank-digital-currency/>

Central Bank Digital Currency

Banque de France, 4 February

<https://publications.banque-france.fr/en/central-bank-digital-currency>

Central Bank Digital Currency: An innovation in payments

R3, 1 April

<https://www.r3.com/reports/central-bank-digital-currency-an-innovation-in-payments/>

Libra White Paper v2.0

Libra Association, 16 April

<https://libra.org/en-US/white-paper/>

Digital currencies: A question of trust

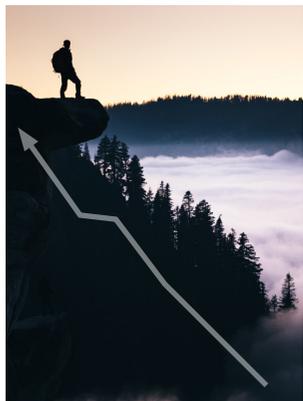
OMFIF

<https://www.omfif.org/questionoftrust/>

Retail CBDCs: The next payments frontier

OMFIF

<https://www.omfif.org/ibm19/>



When & where

The key question is not 'if', but 'when and where' a CBDC will be introduced

CBDC: The next payments frontier

A pipe dream only a short while ago, central bank digital currencies are set to be the next big innovation in the payments sector, writes Philip Middleton, Deputy Chairman, OMFIF.

IN the space of a few short months, the subject of central bank digital currency has been catapulted from a backroom theoretical abstraction to a serious top table question in central bank boardrooms around the world. The need for an alternative to the putative introduction of a globally significant private currency in the shape of Libra and the practicalities of potentially rapidly distributing cash en masse to citizens as part of unprecedented government responses to a pandemic have made the introduction of CBDCs a strong likelihood. The key question is not 'if', but 'when and where' a CBDC will be introduced.

We are almost certain to witness the introduction of a central bank, that is fiat, retail digital currency in relatively short order. This will be issued either as a complement to or as a complete substitute for notes and coins. We do not envisage completely independent privately issued digital currencies gaining significant acceptance or usage. Some may operate on a small scale in closed private networks. Some may operate more broadly, for example as payment mechanisms within messaging networks but under sovereign regulation and supervision, with their ultimate expression in fiat currency, but they will not be permitted to challenge the monopoly of fiat currency enjoyed by national governments. The threats to national sovereignty and financial stability are too great. Cryptocurrencies such as bitcoin will remain a minority interest for speculators and criminals.

Because there are many policy reasons underpinning the launch of a CBDC, and because all are not mutually compatible, we

anticipate a period of rich and varied experimentation around the globe, with various national initiatives being launched. In many countries, the primary objective will be to completely or partially remove physical cash from the economy, although several models will be possible in pursuit of that goal. Other significant objectives will include promoting financial inclusion, curtailing the black economy, facilitating migrant worker remittances, improving the national payments infrastructure and reducing financial crime. Some central banks may permit or encourage new private sector non-bank currency issuers; others may seek to exclude them entirely. Currency interoperability, both within national economies and eventually cross-border, will be a major technical and regulatory issue.

Although the primary leaders of these initiatives will be central banks, we anticipate extensive private-public sector partnerships wherein, for example, the private sector provides or indeed runs technology, infrastructure, operations and customer services on an outsourced or more deeply collaborative basis. There will be a growing number of studies, use cases and pilot programmes as both sectors explore, design and test what is possible and desirable before settling on a solution. It will, however, be policy imperatives rather than technology capabilities that will be the primary driver.

The OMFIF Digital Monetary Institute is being launched to provide a confidential, collegiate forum for public and private sector participants to engage in the intense debate, discussion and delivery we are about to witness in multiple flowerings of CBDC around the world. We look forward to the engagement of all our members. •

Libra reinvents itself

The Libra Association has responded to criticism over the first iteration of its planned cryptocurrency in a new whitepaper, writes Bhavin Patel, Senior Economist & Head of Fintech Research, OMFIF.

THE Libra Association has released a second whitepaper, updating its vision of the Libra cryptocurrency, following pushback on the first iteration of the project.

It has abandoned its plan to form a free-floating global coin tethered to a basket of currencies. This was the most offensive part for central banks of the original plan. The offering now extends to single currency stablecoins. These will be backed by cash as well as short-term credit worthy government debt. This will require the Libra Association to work with the central bank of a currency's jurisdiction to expand the number of stablecoin currency offerings and expand the network.

From these single currency stablecoins, a digital composite will be created. This 'Libra coin' will be similar to the original concept and will be available for cross-border transactions. Such a strategy will dampen the concerns central banks and regulators had about the original Libra coin, which posed a significant threat to monetary sovereignty and policy control.

The association is also committed to prove that all stablecoins in circulation are backed by corresponding assets. Data on the composition of the reserves and the market value of these assets will be available live.

Libra is beefing up regulation. It has outlined a multitude of

compliance measures, from requiring all permissioned members on the blockchain network to conduct due diligence to the method through which the supply of coins is managed. Libra will allow its blockchain to be publicly verifiable, giving audit powers to all.

The Libra Association is applying for a payments system licence from the Swiss Financial Market Supervisory Authority, allowing for regulators to have greater oversight, and will also make the blockchain permissioned. The Libra Association is keen to distance itself from its parent, Facebook. The whitepaper reiterated that the Libra Association was independent, governed by the association's council.

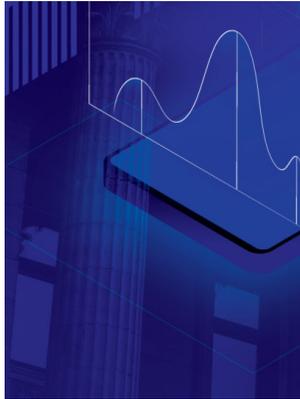
Central bank digital currencies have given encouragement to the Libra project. The hope is to integrate CBDCs within the Libra ecosystem in the future. This will streamline the operations used to manage the Libra reserve and remove credit and custody. If CBDCs can be incorporated directly into the payment system it could the need for Libra's stablecoins. This would turn Libra into a more traditional payments service provider, like PayPal.

As the project moves over the past year from abstruse over-ambition to more palatable reality, central banks will have no choice but to respond to Libra's revised strategy. •



Reality

As the project moves over the past year from abstruse over-ambition to more palatable reality, central banks will have no choice but to respond to Libra's revised strategy



13%

Percentage who suggested they did not know in which type of institution they should place their confidence for digital currency issuance, highlighting the large information gap that exists in this space

CBDC the preferred form of digital currency

Central banks are the most trusted institutions when it comes to issuing digital currency, with safety and privacy the most sought-after characteristics in payment instruments, writes Pierre Ortlieb, Economist, OMFIF.

THE OMFIF report ‘Digital Currencies: A Question of Trust?’ found that central banks are in pole position to issue digital currency. It was based on a global survey of 13,000 individuals across 13 advanced and emerging economies conducted by Ipsos MORI.

Our survey began with a question on institutional trust, asking respondents which of a set of monetary service providers they trusted the most. In descending order of net trust – measured as trustworthy minus untrustworthy ratings – these were central banks, payments service providers, commercial banks, credit card companies, and major technologies.

There were significant gaps between countries. Among advanced economies, for instance, net trust in the national central bank was much higher in Britain than in Germany, France or Italy. Similarly, there was an almost 30 percentage point gap in net trust in PSPs between Britain and Japan. These disparities were also visible between income and education groups, with richer, higher-educated respondents more likely to express net trust in any of the monetary service providers in question.

When asked about the preferred characteristics they sought in payment instruments, respondents expressed a clear preference for safety and privacy protection.

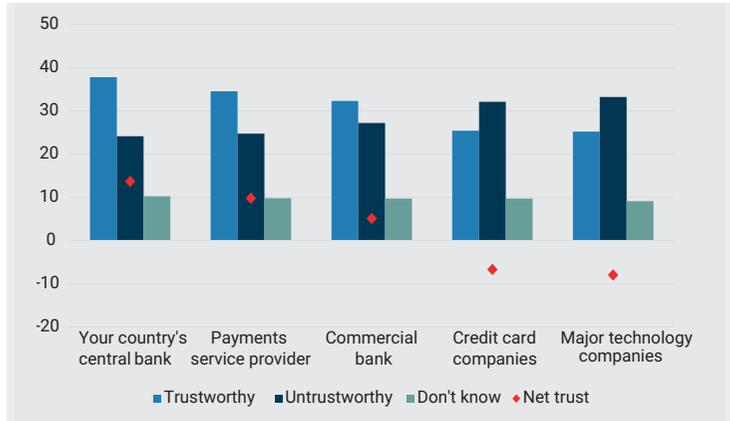
Respondents widely felt that cash performed these features best. Digital money, for its part, was best regarded for its speed,

yet generally performed poorly across all categories, especially safety, wide acceptance and privacy protection. This suggests two immediate priorities for regulators seeking to make their jurisdictions more digital currency-friendly. First, broaden the scope of possible uses; and second, design a reliable safety net for digital money to foster consumer trust.

Finally, the survey asked respondents which institution they felt was best-suited to issuing digital currency, with results overwhelmingly favouring central banks. However, while central banks were preferred across almost all jurisdictions, there does not appear to be a clear mandate for CBDC in developed economies. In most of these (bar Japan and Britain), respondents expressed low single-digit or negative net trust in a potential CBDC. Among emerging markets, net confidence in a potential CBDC was high, with countries such as India and Malaysia recording net trust scores above 50 percentage points. Generally, trust in any potential digital currency issuance was higher in emerging markets across all potential issuers. Yet worryingly, a relatively high share of respondents globally – 13% – suggested they did not know in which type of institution they should place their confidence for digital currency issuance, highlighting the large information gap that exists in this space. •

1. Central banks the most trusted global MSP; tech companies lagging behind

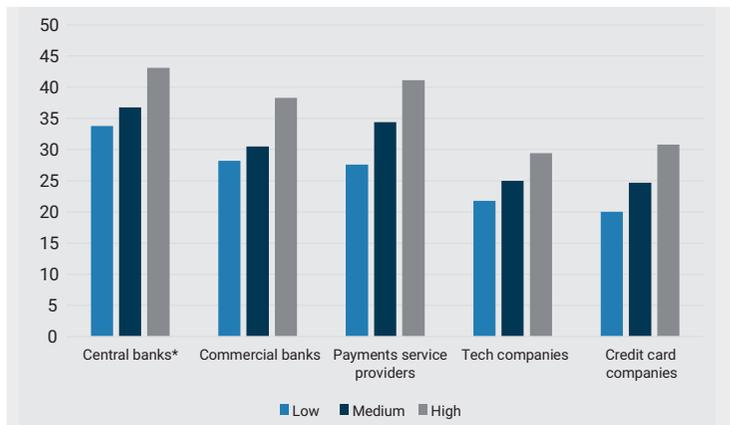
'Do you think each of the following institutions is trustworthy or untrustworthy?', % of global 'trustworthy,' 'untrustworthy' and 'don't know' responses



Source: Ipsos MORI, OMFIF analysis. Note: 'neutral' responses excluded

3. Institutional trust split by income

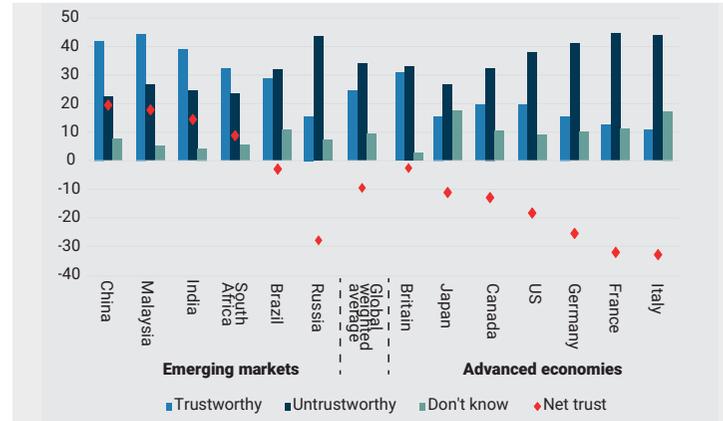
'Do you think each of the following institutions is trustworthy or untrustworthy?' for commercial banks, % of global 'very trustworthy,' 'trustworthy' responses by income group



Source: Ipsos MORI, OMFIF analysis. *Note: excludes China

2. Tech companies least trusted on payments in developed markets

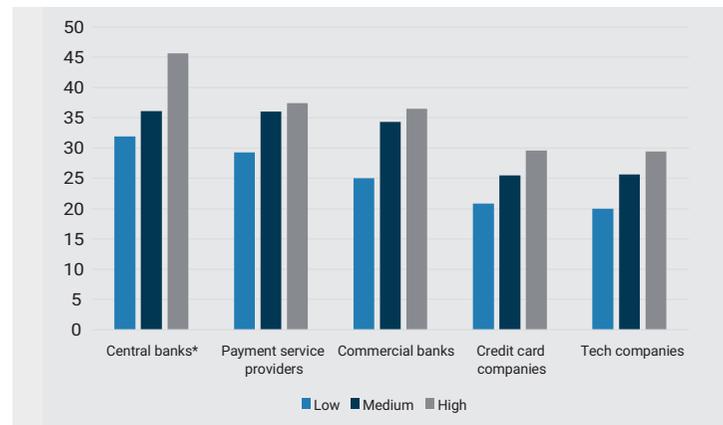
'Do you think each of the following institutions is trustworthy or untrustworthy?' for major tech companies, % of 'trustworthy,' 'untrustworthy' and 'don't know' responses by country



Source: Ipsos MORI, OMFIF analysis. Note: 'neutral' responses excluded

4. Similar divide among education groups

'Do you think each of the following institutions is trustworthy or untrustworthy?' % of global 'very trustworthy,' 'trustworthy' responses by education group



Source: Ipsos MORI, OMFIF analysis. *Note: excludes China



50%

Among emerging markets, net confidence in a potential CBDC was high, with countries such as India and Malaysia recording net trust scores above 50%



Cash

Expensive to produce and handle, has obvious security issues, and being anonymous doesn't yield the transaction data that the police and the revenue authorities might be interested in

What's in it for me?

Central bank digital currencies present some problems for the understanding of the average person, writes Philip Middleton.

DEAR central bank governor,

In normal circumstances, I am 'the man on the Clapham omnibus' so beloved of judges and politicians as the archetype of the common man, citizen and taxpayer. Unfortunately, I am in lockdown so unable to get to my omnibus, but I am catching up on my reading. I came across an article recently saying that, in addition to all the other herculean macroeconomic stuff your central bank is undertaking at the moment, you are considering introducing digital cash – also known as a central bank digital currency. I thought I would ask for a broader explanation of what this is all about.

I hear that you want to get rid of physical cash which I am told is expensive to produce and handle, has obvious security issues, and being anonymous doesn't yield the transaction data that the police and the revenue authorities might be interested in. There have also been some disputed suggestions that cash aids the spread of unpleasant viruses. In truth, these days, I am using cash much less and using a contactless card issued by my bank for buying my coffee, newspaper and croissant from the bakery. I can see that digital money does have advantages. It's easy, convenient, and seems secure, although like cash, I need to be careful not to lose it. Mind you, it doesn't suit citizens without bank accounts or my granny who collects her pension in cash

from the post office. If you are going to get rid of cash, you are going to have to think hard about how you are going to replicate all of its advantages, and make it accessible to citizens who neither have nor want checking accounts. However you choose to replace cash, it will have to be widely accepted, secure, easy to use and private.

You are also going to have to spend a lot of time clearly explaining the differences between central bank money and private money if CBDCs are going to gain widespread support and use. While I can grasp the fundamental differences between our national currency and cryptocurrencies such as bitcoin, I am afraid the subtleties of fractional reserve banking are beyond me, and I really cannot see why a contactless card from the central bank is different from the one I already have in my wallet.

I see from recent research that central banks are among the most trusted institutions and that citizens trust them more than most private sector financial or technology companies, especially when it concerns digital payments. So, it is probably best that you are taking the lead in this domain. I look forward to hearing more from you on this but will probably hang on to some cash for the moment if that's fine by you.

Sincerely yours,

A concerned citizen •

Crisis of disconnection

The response to the Covid-19 pandemic relies on digital and financial inclusion, placing those excluded from financial systems – particularly the elderly and those living in rural areas – at greater risk of poverty, writes Kat Usita, Deputy Head of Research, OMFIF.

THE disruption forced by Covid-19 provides a rich opportunity for digital banking platforms, but also demonstrates how unequal access can deepen socio-economic and demographic divides. Effective and immediate crisis response relies on financial and digital inclusion.

Access to banking services can drastically change an affected individual's ability to cope with a lockdown. For those working remotely, online and mobile money platforms enable continued payment and receipt of wages. For frontline and essential workers, contactless transactions can help minimise exposure to the virus. For those whose livelihoods have been compromised, financial access and literacy may be necessary to receive and use government relief. Individuals excluded from financial systems and digital platforms are at greater risk of catching the virus or facing poverty while under lockdown. In the US, almost 30m people have filed for unemployment insurance. In most states, payments are disbursed through prepaid debit cards which claimants can apply for online. Individuals already familiar with card-based transactions will find this straightforward. Those used to receiving wages in cash or cheque are more likely to struggle, and may need customer support at a time when banks are already having to scale down operations.

Residents of rural areas that have fewer bank branches and ATMs may face difficulty in accessing and using their insurance

payments; even more so if they are unable to utilise online platforms. A November 2019 report by the Federal Reserve Board found that more than 40% of rural counties in the US lost bank branches between 2012-17. During this period, 1,533 bank branches closed, representing 14% of total branches in rural counties, which often are home to poorer communities and people who have received fewer years of education.

The disproportionate vulnerability of the elderly to Covid-19 reinforces the importance of financial and digital inclusion across demographics. Based on World Bank data, just over 40% of adults aged 60-69 in high-income countries have made payments through mobile phones or the internet. Only 16% of adults over 80 have done the same. In low- and middle-income economies, the figures are even lower. Fewer than 5% of elderly individuals have made digital payments. With the heightened stress and uncertainty created by current conditions, elderly and other vulnerable individuals – including the unbanked and underbanked – will find it difficult to start using digital tools. Banks and other financial services providers should consider this lesson. Digital platforms have proven their value in this crisis of disconnection. Now more than ever, banks and other financial service providers need to ensure that nobody gets left behind, especially those who are most at risk. •



40%

Just over 40% of adults aged 60-69 in high-income countries have made online payments



To do

Last year, Mastercard and Doconomy launched DO, a mobile banking service that lets users track and reduce their carbon footprint through offsetting, guiding consumption to more sustainable choices

Digital finance's sustainability dividend

Fintech is already helping green the financial system and ensure it is more inclusive. As policy-makers look to rebuild the global economy after the pandemic, technology can help them do so in a sustainable way, writes Danae Kyriakopoulou, Chief Economist and Director of Research, OMFIF.

THE Covid-19 crisis has exposed the fragility and lack of sustainability in our economic and social systems. As the world emerges from the pandemic, starting in Asia, the economic recovery will require substantial investment. The climate crisis remains a priority. The incentives are clear for policy-makers in terms of voter preferences, but also for market participants given the financial risks associated with holding brown assets in their portfolios. A major obstacle to scaling up sustainable finance is the lack of timely and useable climate-risk data.

One way to resolve this is through data disclosures. These efforts can be complemented through leveraging government and geospatial data provided by technology companies. The Refinitiv-led Future of Sustainable Data Alliance, of which OMFIF is a founding partner, works to determine investors' data needs related to sustainable investment. It explores how technology and data can help support the transition to more sustainable models of economic development.

On a micro level, the Covid-19 outbreak has shown how digital technology can help partly substitute the need for business travel. Communication technologies have enabled conferences, seminars, and inter-governmental negotiations to take place virtually and without flight carbon emissions. Turning such practices

mainstream could help shift the global demand for flying into more sustainable levels as we adjust into a post-pandemic reality.

Beyond climate change, technology and digital finance provide opportunities to accelerate progress on other United Nations sustainable development goals. From the bottom up, technology can help make the financial system more inclusive. It can enhance the role of individuals, giving them a greater say in how their money is invested and how their power as consumers can help direct businesses towards sustainability. Last year, Mastercard and Doconomy launched DO, a mobile banking service that lets users track and reduce their carbon footprint through offsetting, guiding consumption to more sustainable choices. From the top down, fintech and digital technology can help inject greater transparency, accountability and efficiency in government in terms of use of public funds, raising taxes, and spending of public budgets. For developing countries, it can help lower the cost of raising capital locally to finance infrastructure for development, and create opportunities for leveraging, mobilising and attracting more resources to finance the SDGs. The aftermath of the health crisis will see attention shifting to the rebuilding of the economy. Digital technology tools can help make sure this is done in line with sustainability goals. •

Low interest rates create digital finance opportunities

A low reward for locking up money in long-term bank deposits has placed an onus on convenience and liquidity, which presents an opportunity for digital finance, writes Chris Papadopoulos, Economist, OMFIF.

THE most fundamental definition of the rate of interest is that it is the reward for parting with money. A better definition is that it is the reward for sacrificing liquidity.

Over the last decade, the interest rate has fallen on all bank accounts, from normal accounts where money is accessible at short notice to longer-term savings accounts where a notice period is required. Without a reward for locking up money in long-term accounts, deposit holders are moving money into shorter-term accounts. The trend is clear and ubiquitous.

In the UK, more liquid forms of money such as deposits that allow instant access make up 72% of the total money stock, according to Bank of England figures. This is up from 62% a decade ago. The euro area's M1 money measure, which counts the most liquid forms of money, is 69% of total money, up from 49% 10 years ago, according to the European Central Bank. Data from the Federal Reserve show that US M1 is 20% of the broader M3 money supply (estimated by OMFIF, as M3 is no longer published), up from 14% 10 years ago.

A low reward for locking up money in long-term bank deposits has placed an onus on convenience and liquidity. This presents an

opportunity for digital finance and broader financial technology innovators. Any service that can provide greater convenience for deposit holders in terms of payments and cash management will be competition for established banks. Deposit holders also prefer liquidity as a buffer for times of crisis. The credit risk of new providers need not come into question if they are covered by deposit insurance. New financial innovators that do not have to reform legacy systems are well placed to meet this demand.

Households that do want a reward for parting with liquidity are looking at retail investment rather than savings accounts. This demand is being met – it is impossible to take a trip on the London Underground without seeing several advertisements for retail investment providers, many keen to show off their user-friendly technology.

It is not just convenience in converting money into goods and services, but convenience in converting money into assets such as bonds, equities and others, that provides opportunities for digital finance providers. As long as interest rates remain low, convenience and liquidity, not interest, will be the deciding factor for customers choosing providers for payments and deposit services. •



72%

In the UK, more liquid forms of money such as deposits that allow instant access make up 72% of the total money stock. The euro area's M1 money measure, which counts the most liquid forms of money, is 69% of total money, US M1 is 20% of the broader M3 money supply



90%

Mobile payments via their ewallet products such as WeChat and AliPay dominate nearly 90% of the Chinese market

Neighbours look to China for payment technology

Chinese financial technology firms are set to prosper in Southeast Asia, as long as they are able to adapt to foreign regulatory regimes and differing notions of cybersecurity and data privacy, writes Brandon Chye, Economist, OMFIF.

CHINESE financial technology firms have matured under a favourable domestic policy regime with very different standards compared with other markets. Whether or not these companies can adapt successfully abroad will shape the development of Asia's financial and payments infrastructure.

Within China, third party payment systems have grown considerably, anchored by established Chinese technology companies. Baidu, Alibaba and Tencent are the most prominent examples of local technology companies leveraging their data products to provide financial services to businesses and retail consumers. Mobile payments via their ewallet products such as WeChat and AliPay account for nearly 90% of the local market.

As domestic markets become saturated, Chinese fintech firms are beginning to venture abroad. The fintech and mobile payments arena in southeast Asia may play host to a proxy battleground between Chinese tech giants and local companies. Close geographical proximity combined with significant inbound Chinese tourism, widespread mobile connectivity and a sizeable demographic of unbanked and underbanked make Southeast Asia a lucrative opportunity for China's payment providers. In Indonesia alone, it is estimated that the value of mobile payments in 2020 will exceed \$15bn. Chinese innovations are seemingly well-suited to being re-applied to southeast Asia's developing

countries. Yet Chinese players must contend with local start-ups from the fields of ecommerce, internet gaming and ride-hailing services that have moved into this space. The competitiveness and popularity of Chinese mobile payment providers in southeast Asia will depend on their capacity to extend service offerings beyond ewallets holding stores of value. For instance, banking services such as the provision of credit and insurance will be differentiating factors. Already, companies and consortia involving Ali Baba's Ant Finance, Bytedance, Tencent and Ping An among others, have attained or applied for virtual banking licenses in Hong Kong and Singapore. Chinese firms could exploit their experience in predictive credit modelling from social media usage and alternative data sources.

However, these sophisticated value-adds are predicated on firms having access to copious amounts of personal and big data. Even the People's Bank of China's forthcoming digital currency is intended to provide 'controllable anonymity' among retail payments. It is uncertain if these prerequisites and policy goals would be palatable and replicable for Chinese companies operating under alternative regulatory regimes. Businesses, regulators and consumers alike will have to grapple with divergent notions of cybersecurity, data privacy and accountability. •

A future society built on central bank digital currency

In the future, digital money could complement cash, in a way that ensures money remains an independent public good, writes Wolfram Seidemann, Chief Executive Officer, G+D Currency Technology.

CASH provides great value to society. It is the only payment instrument and store of value that makes the user independent from the issuer. The central bank, which is guided by public interest, guarantees its value and liquidity. As a result, cash is a public good. It is inclusive, universal and resilient, and protects privacy.

Some users may opt for cashless alternatives for added convenience, such as credit functions, loyalty points or promotional discounts. However, such extra functionalities either incur fees or involve the collection of data. Cashless payment providers tend to target specific customer segments, meaning they will never reach the same market share or level of inclusion that cash inherently does. Cash could become less prevalent if access becomes difficult or digital business models that reject cash prevail. Such models often force the user to subscribe to a third-party contract with a profit-driven provider, pay fees or agree to personal data collection. If global private digital schemes took the lead in digital payments, central banks' ability to preserve economic and financial stability would be undermined.

I hope for a future in which cash continues to play a role but is complemented by an equally valuable central bank digital currency. CBDC is a public good: it is universally accepted, free from social and economic barriers and can be used independently from the

issuer, making it a truly democratic and free instrument.

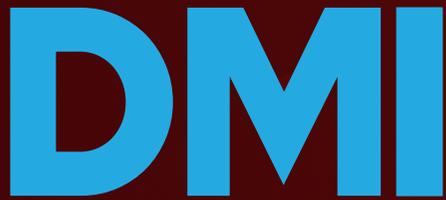
To be widely accepted, CBDC has to be anonymous. At the same time, it must be secure and protect users against criminal activity. Mechanisms that prevent untaxed economies and financial crime in the physical world – none of which reduce the value of cash or restrict citizens' freedom to make transactions – must be transferred into the digital realm. A CBDC that includes such mechanisms could have the greatest network effect in non-cash payments. It could become the new benchmark, as cash is today. This model should be value-based, rather than account-based. Blockchain is not the solution to deliver this. Trust should be placed in an institution to issue currency, not in an algorithm. Strong encryption technology will be essential to carry a public payment scheme into the post-quantum era.

In the future, banknotes will remain in use, but coins will become digital. For example, money withdrawn from an ATM as banknotes could be used at the point of sale and the change deposited digitally onto a smartwatch. The future of digital payments systems will greatly affect the public's freedom. By encouraging the use of both banknotes and their digital equivalent, countries would ensure the continuation of central banks' mandate to issue currency that can be used independently. •



Trust

Trust should be placed in an institution to issue currency, not in an algorithm



 Digital Monetary Institute

Forthcoming meetings

To register visit omfif.org/dmi

For programme queries and requests please contact katie-ann.wilson@omfif.org

7 May

CBDC and maintaining the public role of money

Virtual roundtable with Peter Wierdsma, Senior Policy Adviser, Payments and Market Infrastructures Division, De Nederlandsche Bank

In April, De Nederlandsche Bank announced it was ready to play a leading role in a Eurosystem central bank digital currency experiment. Peter Wierdsma elaborates on the role CBDC could play amid declining cash use, possible objectives – and which are the most important – as well as design choices.

18 May

Prospects for a digital euro

Virtual roundtable with Ulrich Bindseil, Director General Market, Infrastructure and Payments, European Central Bank

Discussions on central bank digital currencies have moved from purely theoretical examinations to practical experimentation, including at the European Central Bank. Ulrich Bindseil outlines the ECB's CBDC agenda, honing in on its current priorities and collaboration with member states.

27 May

Banque de France's wholesale CBDC experiment

Virtual roundtable with Christian Pfister, Deputy Director General, Directorate General Statistics, and Valérie Fasquelle, Head of Innovation and Payments, Banque de France

Digital currency solutions for interbank settlement has the potential to transform current systems' speed, resilience and cost efficiency. Valérie Fasquelle and Christian Pfister outline the Banque de France's latest work on a wholesale digital euro. They discuss the parameters of the experiment, the motivations behind it, and the use cases they aim to assess.

10 June

Considerations for a digital dollar

Virtual roundtable with David Mills, Deputy Associate Director, Reserve Bank Operations and Payment Systems, Board of Governors of the Federal Reserve System

In late March, during the first Covid-19 stimulus debate, the US Congress discussed the creation of a digital dollar to assist in sending payments to US households. The proposal was restricted to electronic payments, but the suggestion brings back to the fore the debate surrounding central bank digital currencies and their role in the economy. David Mills assesses the opportunities and challenges of a digital dollar.

December 8 2020: OMFIF Central Banks and Digital Currencies Symposium

The Institute's inaugural CBDC symposium will take place in London. OMFIF will bring together the world's leading central banks, regulators, policy-makers and market participants from the world of banking and technology to discuss the trends and evolution of the new digital environment. Around 150 are expected to attend this day-long event featuring a series of plenary panels and break-out sessions. This will be the world's pre-eminent gathering where the challenges and opportunities of CBDC will be discussed with senior representatives of the G20 central banks.