The Future of Cash?

A Novel Approach to Re-imagining the Future

Guillaume Lepecq
CashEssentials

Petteri Lillberg
Demos Helsinki

2021

CashEssentials
cashessentials.org

Table of Contents

CashEssentials | 12, passage Beslay | 75011 Paris | France

Tel. + 33 1 42 52 94 09 | contact@agis-consulting.com | www.cashessentials.org

This paper is based on the discussions which took place during a series of webinars hosted by CashEssentials in May and June 2020.

The interactive webinars combining futurists and experts from the cash and payments world aimed at using Futures Literacy to imagine the Future of Cash. The webinar gathered:

- Diederik Bruggink, Head of Innovation and Payments, European Savings and Retail Banking Group
- Antti Heinonen, Chairman, Banknote Ethics Initiative; Former Head of Banknotes, European Central Bank
- Guillaume Lepecq, Chair, CashEssentials
- Petteri Lillberg, Senior Consultant, Demos Helsinki
- Franz Seitz, Professor of Economics, especially monetary policy, financial and payments markets at Weiden Technical University of Applied Sciences, Germany

This paper was written by Guillaume Lepecq and Petteri Lillberg and summarizes the debates which took place during the webinars. The authors are indebted to Diederik Bruggink, Antti Heinonen, Franz Seitz and Linnea Anttila for reviewing the paper and sharing their insights.

1.

Why the Future of Cash?

This paper aims to answer three questions:

1. Will cash survive? Will cash be able to resist the successive waves of digitalization, or is it merely a question of time before it becomes part of monetary history?
2. Should it survive? What value does cash bring to a diversified monetary landscape? Is that value specific to cash or can it be replaced by digital money?
3. Can we make cash evolve to ensure its future sustainability?

Over the past decades, there has been a massive wave of digitalisation, including of money and payments. As in many other industries (music, travel, film, shopping…), the adoption of new technologies has radically changed the organization, the structure and the perception of the monetary system. The digitalisation of money is evidenced by the multiplication of new forms of money and payment, ranging from payment apps, such as Alipay, WeChat Pay, Google Pay, Apple Pay or M-Pesa, to contactless payments, whether card- or phone-based or embedded in subdermal chips. It is also evidenced by the increasing reach of digital financial inclusion; the share of adults holding a bank account around the world, has risen from 51% in 2011 to 69% in 2017.[1] The stock of money held digitally, compared to the stock of physical currency is another indicator of this digitalization; in the euro area, the share of cash in the money stock M1 has declined from 23% in 1980 to 13% in December 2020.

1 Global Findex Database 2017. https://globalfindex.worldbank.org/#data_sec_focus

The digital trend has not followed a single, homogeneous evolution. It has been driven by the combination of technology, the emergence of new stakeholders in the monetary ecosystem and the evolution of the regulatory framework. A range of technologies — including chip cards, contactless (NFC), biometrics, mobile, Distributed Ledger Technology — have increased the reach and convenience of digital payments. Traditional payment providers — central banks, commercial banks, card schemes — now increasingly compete with new players such as Fintechs, Telcos and Bigtechs. As for regulation, it has combined a push towards more transparency and traceability of money (AML, CFT, KYC[2]...) and the opening of the payments market to new entrants with a view to increasing competition.

The digitalization of money is not a new concept. In Edward Bellamy's 1888 utopian novel *Looking Backward*, the hero travels in time and wakes up in the year 2000, in the United States where credit cards are the new form of money. The people of Yap in Micronesia, are often cited as being the first civilization to develop a concept of abstract money. For centuries, the islanders used large stone discs, with a hole in the centre, as a form of money. The stones, which could weigh up to 4,000 kg, were quarried on a different island and transported by boat. The value and ownership of the stones was transmitted by oral tradition as they were too heavy to displace. In one instance, a stone fell overboard and sank during its transportation, but the community agreed that it still had value and it continued to be used for transactions. For the Yapese people, money was based on shared and trusted information rather than the physical location of a stone. For some, this is a precursor of today's Distributed Ledger Technology which underlies many cryptocurrencies.

Money is the next space race.

Digitalization has also coincided with a global consolidation of the market. The incumbent card payment product providers — such as Mastercard, Visa, or UnionPay — have been joined by telcos but more spectacularly, the last decade saw the arrival of the tech giants (GAFAMs and the BATX) into the payments arena. The Google wallet kicked off in 2011. ApplePay was launched in 2014. In 2018, Facebook announced the launch of its digital currency Libra (renamed Diem in 2020) which is yet to be launched at the time of writing. AliPay and WeChat Pay were launched respectively in 2010 and 2011. All of these payment giants have benefited from the international reach of their parent companies. AliPay for instance has been expanding rapidly outside of China, targeting markets frequented by big-spending Chinese tourists. It is currently accepted in 54 countries.

2 Anti-Money Laundering (AML) regulations aim to uncover illegally obtained funds. Combating the Financing of Terrorism (CFT) regulations focus on the destination of the funds. Know-Your-Customer (KYC) refers to data that financial service providers are required to collect on new customers.

This accelerating concentration of the industry raises issues of competition and sovereignty. When Facebook unveiled plans for the launch of its Libra digital currency in July 2019, the announcement triggered a spate of reactions from central banks, policy makers and regulators worldwide. French finance minister Bruno Le Maire and then President of the G7 Group of Finance Ministers said that he would block the development of Libra on European soil as it poses a threat to "monetary sovereignty". Mu Changchun, Deputy Director of China's central bank's payments department suggested that monetary sovereignty and legal currency status were under threat from Facebook's proposals. In order to address the loss of monetary sovereignty, many central banks are researching the feasibility of a Central Bank Digital Currency — which could become a digital complement or substitute to cash. The Bank for International Settlements (BIS) has already identified[3] 41 retail and 16 wholesale CBDC projects underway with only one live retail CBDC (the Sand Dollar in the Bahamas) and one completed Retail pilot (the e-hryvnia in Ukraine).

3 Auer R, Cornelli G, and Frost J (2020): Rise of the central bank digital currencies: drivers, approaches and technologies, BIS Working Papers N° 880, August 2020. Available at https://www.bis.org/publ/work880.htm

Cash is part of a digital ecosystem

The digital wave has also transformed the circulation of cash throughout the economy. Today, at least in mature economies, most consumers withdraw cash from their bank account using an ATM and increasingly deposit it using the same device. In some countries, central banks have introduced so-called 'Balance-Sheet-Relief-Mechanisms' whereby participants in the cash cycle (e.g. banks) may hold cash inventories on behalf of the central bank, hence significantly reducing the need for physical transportation of the money. Likewise, banks have launched 'smart safes' whereby retailers deposit banknotes and/or coins into a device on their premises which is credited by the bank. Around the globe, a growing number of innovative companies are leveraging software and modern communication technologies to improve access to cash; acceptance of cash; and the efficiency of the cash cycle for all stakeholders. A trend that CashEssentials has dubbed CashTech[4].

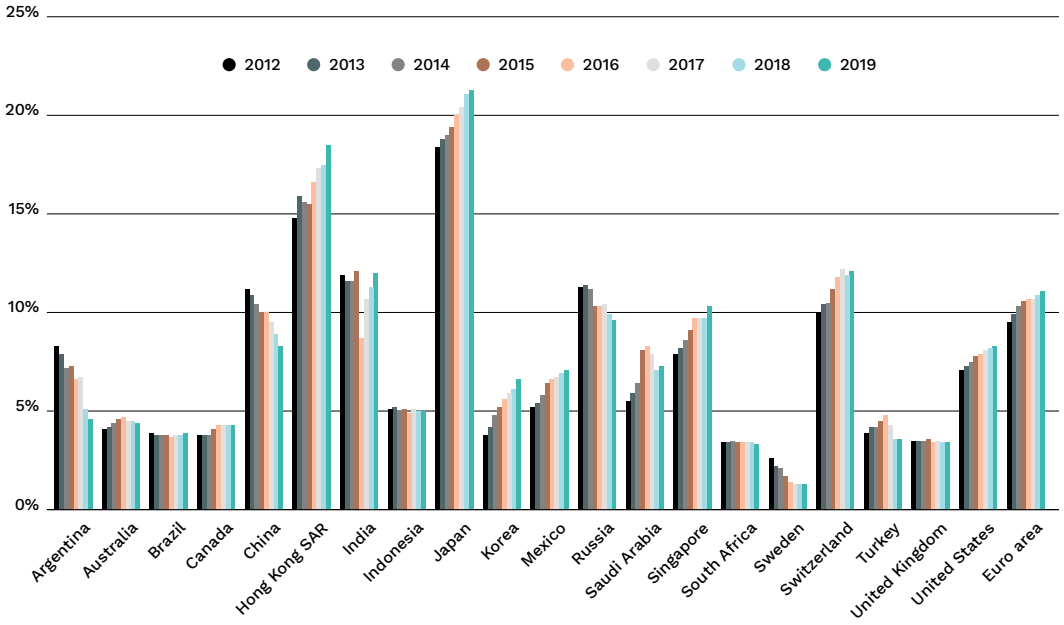
In this increasingly digital world, cash continues to play a prominent role. Not only is the amount of cash in circulation continuing to grow, but it is doing so faster than GDP in the vast majority of countries (See Chart 1). Significantly, a number of the world's most mature economies, advanced in terms of payments technology, have very high levels of cash in circulation and high growth (Japan, Hong Kong and Switzerland, for example). The European Central Bank's latest payment attitudes survey[5] records that cash remains the most common way to pay in the euro area, accounting for 73% of all physical retail payments in the euro area in 2019 (down from 79% in 2016). In spite of increasing demand for cash, the use of cash for payments has generally declined even though this has occurred at different rates in different countries. This phenomenon is known as the 'cash paradox'.

4 See *CashTech: Taking Cash Forward*; CashEssentials.

5 Study on the payment attitudes of consumers in the euro area (SPACE) (December 2020); European Central Bank. https://cashessentials.org//app/uploads/2020/12/ecb.spacereport202012bb2038bbb6.en_.pdf

Chart 1: Cash in circulation in relation to GDP

The chart shows the value of banknotes and coins as a percentage of GDP.



Sources: Bank for International Settlements; CashEssentials

The common future narrative is one of increasing uniformity, decreasing choice and digital only. Money is becoming increasingly digital and cash is expected to disappear. The only variations in this scenario are the timeline — which ranges between now and the next generation — and the proposed policy response. Some advise to accelerate the demise of cash while others recommend slowing it down to avoid leaving some people behind.

This paper challenges this notion of a singular future and frames the much needed discussion around the future of cash not only as a technological issue, but as a societal question with fundamental implications for inclusion, equality, resilience, efficiency and privacy.

2.

Covid-19 has accelerated change

The COVID-19 pandemic has had far-reaching consequences on human and economic activities, including on cash, payments and money. For many observers, the pandemic has acted as a catalyst and accelerated existing trends.

A huge impact on retail payments

The pandemic has had a huge impact on retail payments as the shutdown of entire economic sectors — air travel, cultural events, restaurants, hotels... — combined with lockdown policies around the globe have led to a sharp reduction in transaction volumes, whether cash or digital. Besides the drop in volumes, the pandemic has also changed the way we pay as there has been a shift to online payments as well as contactless payments, as consumers and retailers have attempted to reduce the handling of cash, cards and card terminals or keypads, which have been accused — sometimes irrationally — as posing a risk of transmitting the disease.

An accelerating shift towards digital payments

In the early stages of the Coronavirus pandemic, numerous misleading reports and articles advised against using cash claiming that banknotes and coins could be vectors in the spreading of the virus[6]. Scientific evidence suggests that the probability of viral transmission via banknotes is low when compared with other frequently-touched objects, such as credit card terminals or PIN pads. This has provided a golden opportunity for proponents of digital money and payments to boost their efforts to replace cash. Economists E. Beretta and D. Neuberger[7] analyse how Covid-19 has boosted commercial incentives and government policies to nudge consumers away from cash. In many countries, limits on contactless cards payments were increased; governments, banks and payment service providers and retailers launched campaigns in favour of digital payments. Some retailers refused to accept cash altogether. An April 2020 report by the Bank for International Settlements[8] concluded that the pandemic could speed up the shift toward digital

6 *Cash and Coronavirus — a Communication Challenge*; CashEssentials https://cashessentials.org/cash-and-coronavirus-a-communication-challenge/

7 Beretta, Edoardo; Neuberger, Doris (2020): Institutional hostility to cash and COVID-19, Thünen-Series of Applied Economic Theory — Working Paper, No. 166, Universität Rostock, Institut für Volkswirtschaftslehre, Rostock https://www.econstor.eu/bitstream/10419/226698/1/1741649811.pdf

8 *Covid-19, cash, and the future of payments*; BIS Bulletin N° 3, https://www.bis.org/publ/bisbull03.pdf

payments. The authors warn that “This could open a divide in access to payments instruments, which could negatively impact unbanked and older consumers. The pandemic may amplify calls to defend the role of cash — but also calls for central bank digital currencies.”

An exceptional spike in demand for cash

During the coronavirus pandemic, central banks have recorded exceptional spikes in cash demand, as people increase their precautionary holdings. This has confirmed the prevalent role of cash as a store of value in a crisis[9]. Citizens on tenterhooks, in the face of a pandemic, have turned en masse to the “rainy day” safe haven of cash and the sense of stability it provides in uncertain times. A number of countries have seen a significant surge in cash in circulation. In the US, cash in circulation increased by $276 billion in 2020, an annual increase of 15%. In the euro area, the value of euro banknotes increased by €142 billion in 2020. An 11% year-on-year increase and the strongest increase since October 2008, following the collapse of Lehman Bros. A number of other countries have also experienced a similar surge in currency demand: from a group of 53 currencies with up-to-date and readily available information, in mid-2020, more than 60% had their highest annual growth rate for the value of banknotes in circulation during the entire last decade[10].

The pandemic has forced central banks, governments, commercial banks and other stakeholders to adopt short-term emergency measures to ensure the smooth supply and circulation of cash. This has involved remarkable creativity and innovation to overcome the immediate threats and challenges. Some of these decisions may become long-term fixtures. Others will be dropped at the earliest opportunity.

9 See Rösl Gerhard, Franz Seitz (2021), *Cash and Crises: No surprises by the virus*, Institute for Monetary and Financial Stability, Working Paper No. 150, February.

10 Heinonen A. (2020), *Banknote Developments at the Global Level – Before and After the Outbreak of Covid-19*, Currency News Volume 18 — N° 9 / September 2020. Available at https://cashessentials.org/banknote-developments-at-the-global-level-before-and-after-the-outbreak-of-covid-19/

But the crisis has also encouraged us to think about the long-term implications and the world after. The crisis will pass. But the world after will be different. We now need to imagine cash in the world after.

3.

The return of futures thinking

Exploring and forecasting futures takes many forms, from a traditional corporate scenario planning pioneered by Shell to academic research and international bestsellers and industry predictions, often driven by assumptions of a rapid pace of technological change, all-in-digitalisation, globalisation and climate change prevention. Historically, science-fiction has played a surprisingly important role in how we imagine the future, covering both dystopias and utopias. For instance, Kabir Sehgal, the author of *Coined: The Rich Life of Money And How Its History Has Shaped Us*, has well documented the relationship between money and sci-fi[11] — by looking at how people pay in *Star Wars* or *Star Trek*. Interestingly, science fiction rarely paints a picture of a cashless future.

The chosen approach affects the outcome. Foretelling and prophecies tend to be deterministic and assume a certainty of the coming events, leaving very little room for influencing the future. Predictions and forecasting in turn focus on drawing short-term conclusions from current developments and often assume that a future is a linear outcome of what we already know and see. Whilst this type of thinking places a premium on being accurate as to future events, Covid-19 has showcased its painful shortcomings.

In fact, Covid-19 has marked a notable return of more diverse futures thinking into organisations. It has highlighted the need to retain agency via identifying multiple plausible futures, recognizing different pathways and, importantly, imagining desirable societal futures, even amongst acute crises.

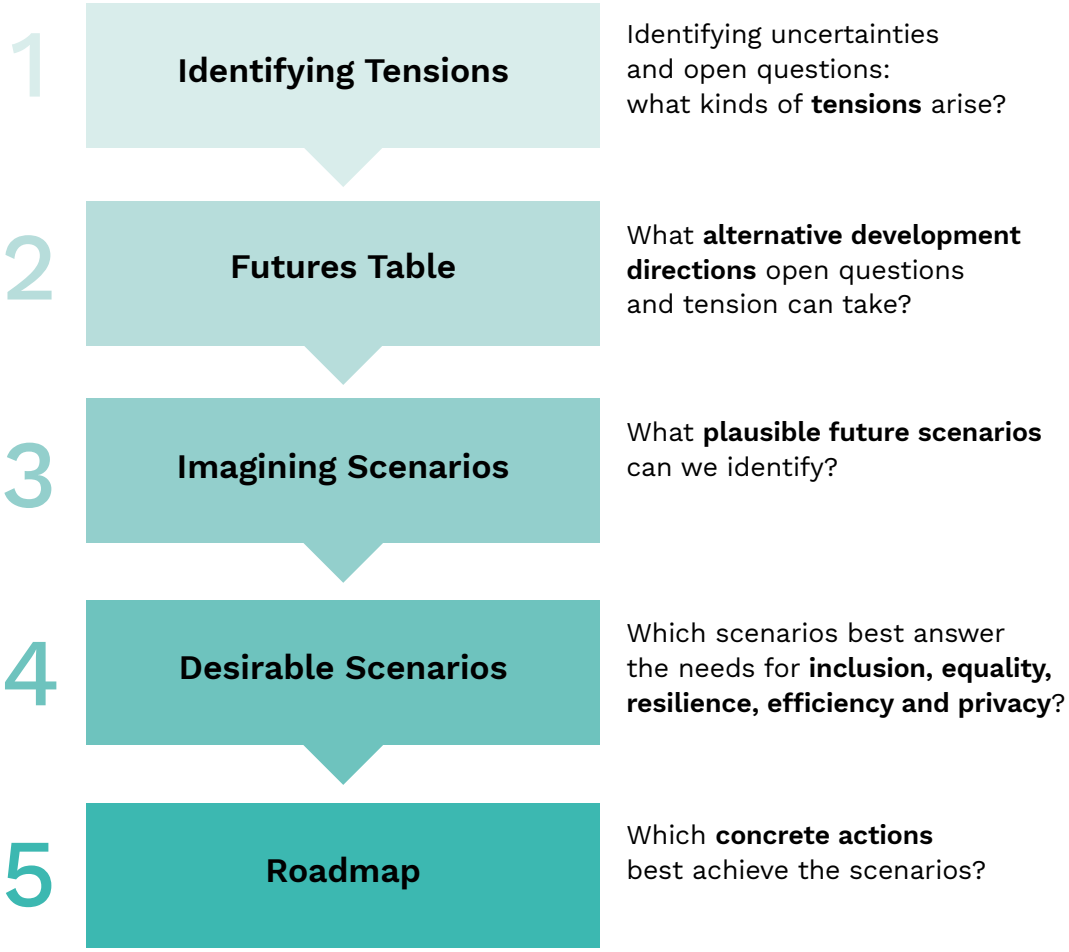
11 https://cashessentials.org/news/what-will-money-look-like-in-500-years/

The approach taken in this paper is the systematic exploration of futures that does not see the future as deterministic, certain and passive, but as stochastic, visionary and proactive. We approach futures thinking as showcasing the multitude of potential futures and ask which of these are possible, probable and desirable, and importantly, how we can make better decisions in the present moment to strive for a future we want, rather than just react.

We take the view that the current, often heard narrative for a society without cash is limited in its outlook and can lead to a number of undesirable outcomes for the society at large. To challenge the existing dominant narrative and diversify the outlook, we think the discussion benefits from following a structured futures literacy process. In the process, we seek to scan the horizons for tensions and uncertainties at hand, identify their alternative development directions and finally build plausible scenarios. These scenarios can vary in their probability and desirability, but they all inform our future actions.

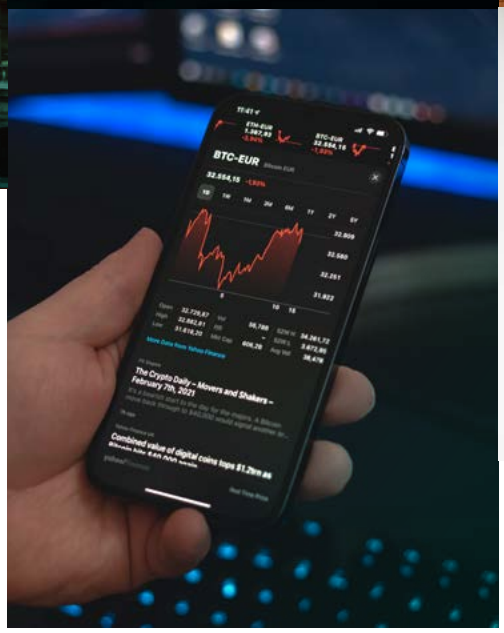
According to UNESCO, "Futures literacy is a capability. It is the skill that allows people to better understand the role that the future plays in what they see and do. People can become more skilled at 'using-the-future', more 'futures literate', because of two facts. One is that the future does not yet exist, it can only be imagined. Two is that humans have the ability to imagine. As a result, humans are able to learn to imagine the future for different reasons and in different ways. Thereby becoming more 'futures literate'."

Futures are best captured by systematic foresight and a futures literacy approach

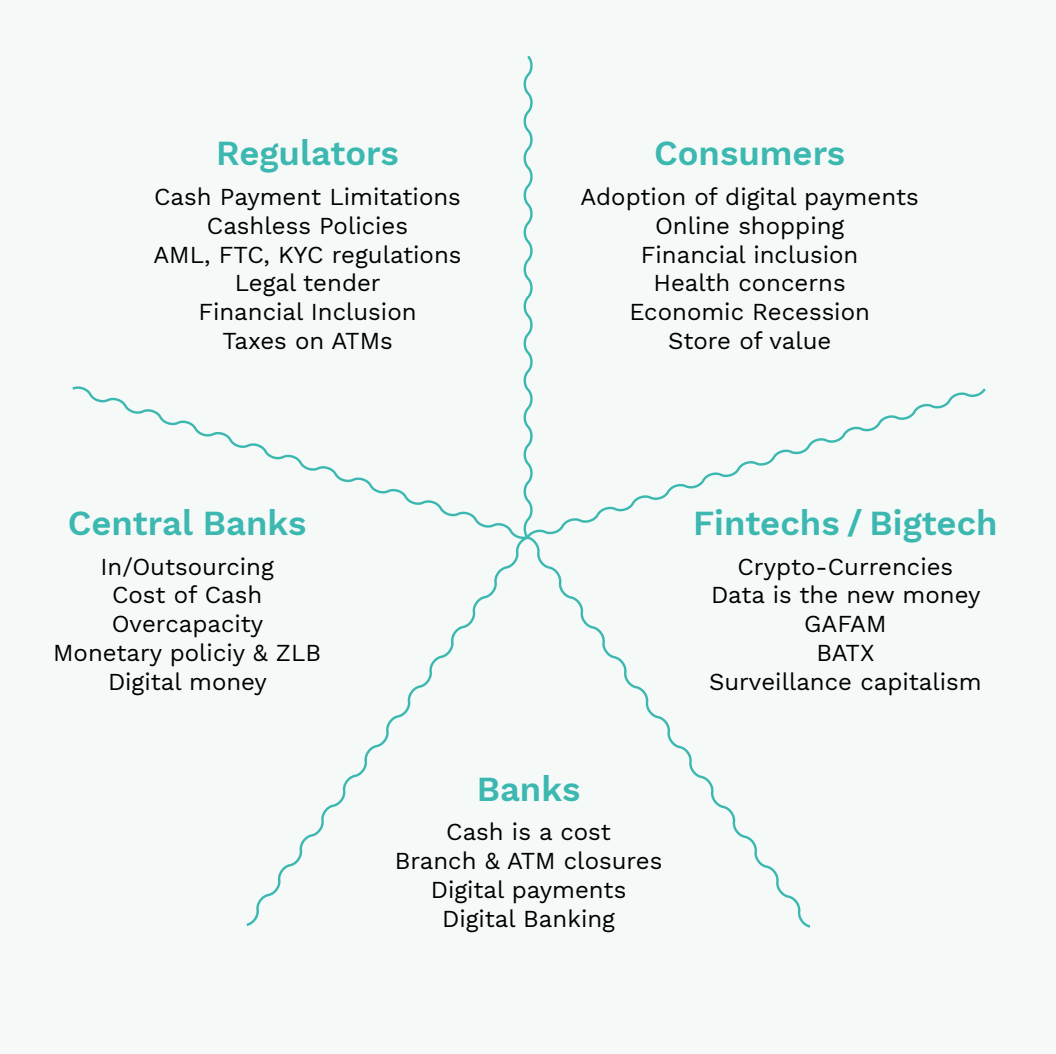


The foresight process followed here is not the only possible approach. Nor do the tensions and variables identified apply to all situations and all countries. It proposes however a rigorous and proactive approach to imagine possible futures.

4.
Five tensions will shape the future



Scanning the horizons for the long-term trends and developments, but also current phenomena help us inform the present discussions. The scan identifies tensions caused by change, creating uncertainty, open questions and, ultimately, diverse possible outcomes.



A rapid horizon scan shows that the future of cash faces both supply-side and demand-side challenges.

The identified tensions and uncertainties tell us what we may not know, but also help us to uncover issues and even opportunities that require solutions. For instance, the future will probably still require public, anonymous payment solutions that are easily accessible for a large share of the population.

Uncertainties arise when a trend is identified but there is uncertainty in its direction. Tensions in turn are formed when two or more trends clash, creating a need for a resolution. A futures literacy process cannot of course provide certainty as to how these tensions will develop or resolutions achieved, but we can and should imagine radically opposing outcomes and increase our ability to think of all the choices we can make — and their expected consequences.

In our futures process, we identified five critical tensions that will shape the future of cash. These tensions are:

1. **Economic recovery:** How the post- COVID recovery led by active, national regimes changes the role and expectations for regional and global institutions

2. **Society:** How the culture of surveillance powered by ever-present data gathering clashes with the individual's right to anonymity and privacy;

3. **Sustainability and Inclusion:** How our current ideas on economic growth and need to provide well-being include the necessary planetary boundaries for human activity;

4. **Technology:** How digital platforms & data as public policy tools clash with platforms & data as commercial, privately-held domains;

5. **Money:** How centrally issued & diversified means of payment co-exist with privately issued & fragmented means of payment.

Economy	**Society**	**Sustainability and Inclusion**	**Technology**	**Money**
Recovery led by national regimes **vs.** Regional and global institutions	Surveillance **vs.** Right to anonimity	Economic growth **vs.** Planetary boundaries	Digital platforms and data as public policy tools **vs.** Platforms and data as commercial, privately-held domains	Centrally issued and diversified means of payment **vs.** Privately issued and fragmented means of payment

The tensions all may have differing potential development directions. Organising them into a futures table — a method pioneered by the astronomer Fritz Zwicky for exploring all the possible solutions to multi-dimensional, non-quantified complex problems — facilitates a comprehensive analysis and discussion around meaningful alternative development directions

A futures table for the future of cash

In its simplest terms, a futures table is a precisely defined, but on purpose polarized, framework about the future.

In the table, the **variables** are the open questions derived from the recognized tensions, describing the issues that can go into different directions. The **values** are the different outcomes or directions of each issue. This allows us to explore combinations of specific outcomes for the displayed tensions.

Tensions	Economic Recovery		Society		Sustainability		Technology		Money	
Variables	Security and resilience of supply chains	Economic Recovery	Social priorities	Surveillance vs freedom	Trajectory of Global Warming	Distribution of wealth	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Strengthen BCP	Post-WW2 global institutions lead recovery	Equality	No surveillance	Mitigation	Efforts to reduce divide between rich and poor countries	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Relocate Sourcing & Production	Local recoveries	Economic growth	Regulated surveillance	Adaptation	Efforts to reduce inequality within countries	Regulated platforms	States control data	Commercial Bank	Fragmen-tation
VALUE 3	Diversify sourcing	Regional governance leads comeback	Individual rights	Surveillance capitalism	Uncontrolled	Increasing inequality	Unregulated platforms	Private corporations sell data	BigTech	Diversifi-cation
VALUE 4	Sovereignty is back	Global recovery lead by few competitive regimes	Transfor-mation	State Surveillance	Denial	Fragmen-tation	Platforms control states	Data is the new currency	Anyone	Cash

Choosing possible development directions is not a random exercise nor guess work. Rather, the choices we make help us to craft narratives that are plausible (thus not fantasy nor science-fiction only) and logical in cause-effect, but also challenge our thinking.

5. Three scenarios and their implications for cash

The second phase of this futures literacy exercise consists in building scenarios which create a credible narrative of possible development paths, events and actions leading to a specific future. These scenarios are not **forecasts**, nor do they reflect our preferences. But they are plausible. They are **radical** in the sense that they have far-reaching implications and they are very different to one another.

The scenarios are built using the previous futures table and by selecting a combination of values for each of the five variables.

5.1 Global Recovery:

Our first scenario is called Global Recovery. As the name indicates, the driving force behind this scenario is that the economic recovery post-Covid will be a global phenomenon, driven by strengthened international institutions, modelled on the post WWII recovery and based on globally shared economic and societal priorities.

Under this scenario, reducing global inequality and mitigating the impact of global warming are the new priorities. International co-operation — channelled through organisations such as the IMF, the World Bank, the UN or at a regional level, the European Commission, or ASEAN — aims at assisting the most affected areas. Digital platforms are strictly regulated by international standards and individuals are in control of their data. International trade is geared towards more resilient and possibly fairer supply chains through some diversification and relocation of sourcing and production.

What would this scenario mean for the international monetary system? The leading role played by international institutions would entail a strengthening of monetary co-operation. This could lead for instance to new Bretton Woods type agreements governing international monetary relations. Existing institutions such as the International Monetary Fund could see their role strengthened and possibly extended to that of a clearing agency. However, central banks would likely retain their role as the main issuing authorities.

With respect to cash, several factors will support its future role. The objective of reducing global equality will increase the importance of financial inclusion and especially payments inclusion; cash plays a vital role in bridging the digital divide and enabling the transition from exclusion to inclusion. The aim to create more resilient supply chains supports the role of cash as a fallback solution, particularly as we see an exponential increase in cybercrime as well as a growing number of extreme weather events which regularly affect access to electricity or the internet. The ambition to defend privacy and regulating technology platforms also supports the use of cash. It also promotes the launch of a central bank digital currency that could challenge existing private forms of money and strengthen the role of central banks.

Tensions	Economic Recovery		Society		Sustainability		Technology		Money	
Variables	Security and resilience of supply chains	Economic Recovery	Social priorities	Surveillance vs freedom	Trajectory of Global Warming	Distribution of wealth	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Strengthen BCP	Post-WW2 global institutions lead recovery	Equality	No surveillance	Mitigation	Efforts to reduce divide between rich and poor countries	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Relocate Sourcing & Production	Local recoveries	Economic growth	Regulated surveillance	Adaptation	Efforts to reduce inequality within countries	Regulated platforms	States control data	Commercial Bank	Fragmen-tation
VALUE 3	Diversify sourcing	Regional governance leads comeback	Individual rights	Surveillance capitalism	Uncontrolled	Increasing inequality	Unregulated platforms	Private corporations sell data	BigTech	Diversifi-cation
VALUE 4	Sovereignty is back	Global recovery lead by few competitive regimes	Transfor-mation	State Surveillance	Denial	Fragmen-tation	Platforms control states	Data is the new currency	Anyone	Cash

5.2

The Return of the State

The second scenario envisages a heterogeneous recovery driven by a few strong states. International relations would be based on competition between states and co-operation would be limited to a strict minimum.

Economic growth becomes the new priority. Countries promote economic sovereignty and aim to relocate supply chains. Global warming is uncontrolled and the most impacted areas see an increase in extreme weather events. This in turn contributes to the aggravation of global inequality. States take control over digital platforms which are used as surveillance tools. States control the data of their citizens.

In what could be perceived as a shift towards more authoritarian regimes, cash guarantees privacy. We would also see intensified competition between public and private money. And an interesting point: both domestic and foreign cash also provides protection against bad government behaviour.

Tensions	Economic Recovery		Society		Sustainability		Technology		Money	
Variables	Security and resilience of supply chains	Economic Recovery	Social priorities	Surveillance vs freedom	Trajectory of Global Warming	Distribution of wealth	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Strengthen BCP	Post-WW2 global institutions lead recovery	Equality	No surveillance	Mitigation	Efforts to reduce divide between rich and poor countries	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Relocate Sourcing & Production	Local recoveries	Economic growth	Regulated surveillance	Adaptation	Efforts to reduce inequality within countries	Regulated platforms	States control data	Commercial Bank	Fragmen-tation
VALUE 3	Diversify sourcing	Regional governance leads comeback	Individual rights	Surveillance capitalism	Uncontrolled	Increasing inequality	Unregulated platforms	Private corporations sell data	BigTech	Diversifi-cation
VALUE 4	Sovereignty is back	Global recovery lead by few competitive regimes	Transfor-mation	State Surveillance	Denial	Fragmen-tation	Platforms control states	Data is the new currency	Anyone	Cash

5.3

Let's get digital.

In this third scenario, the key assumption is that BigTech will be the winners in the next decade. They will drive the recovery and lead the transformation towards a truly digital economy. Global warming is off the radar. The world is fragmented between those who are involved and those who are excluded. Data is a commodity openly traded on platforms. Platforms would become fully fledged members of the UN alongside traditional countries.

In the scenario, the pandemic accelerates the shift towards a digital economy: BigTech become the dominant issuers of money, which would naturally be strictly digital. Money becomes a surveillance instrument. But this scenario raises serious questions of liquidity and access to credit. It also becomes a rather dystopian world where social profiles become a measure of creditworthiness.

In principle, there is little room for cash due to the ubiquity of digital money, but we could imagine that the resistance could use an analogical form of money to avoid government and/or corporate surveillance.

Tensions	Economic Recovery		Society		Sustainability		Technology		Money	
Variables	Security and resilience of supply chains	Economic Recovery	Social priorities	Surveillance vs freedom	Trajectory of Global Warming	Distribution of wealth	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Strengthen BCP	Post-WW2 global institutions lead recovery	Equality	No surveillance	Mitigation	Efforts to reduce divide between rich and poor countries	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Relocate Sourcing & Production	Local recoveries	Economic growth	Regulated surveillance	Adaptation	Efforts to reduce inequality within countries	Regulated platforms	States control data	Commercial Bank	Fragmentation
VALUE 3	Diversify sourcing	Regional governance leads comeback	Individual rights	Surveillance capitalism	Uncontrolled	Increasing inequality	Unregulated platforms	Private corporations sell data	BigTech	Diversification
VALUE 4	Sovereignty is back	Global recovery lead by few competitive regimes	Transformation	State Surveillance	Denial	Fragmentation	Platforms control states	Data is the new currency	Anyone	Cash

6.
A desirable future for cash is based on four guiding questions

Scenarios allow us to chart **a series of events leading to certain types of future.** Even if we use scenarios as tools for open exploration, we cannot escape normative judgement and evaluation as to the futures that are possible, probable and, most importantly, desirable. We have active agency and should choose to work towards a desirable future, guided by a shared vision for good.

In crafting our desirable future, we have chosen to focus on four key guiding questions:
- What is **valuable** to us as human beings?
- What kind of a **society** do we want to live in?
- What is **good and fair**?

And importantly,
- How can we design a monetary system that supports a **sustainable** and **inclusive** society?

In our view, the form of money is not just a technology issue. It is fundamentally a socio-economic issue: the future monetary system should be efficient, fair, inclusive, resilient, respectful of individual privacy, and include a vision for human betterment.

To us, a part of that solution is cash. Our expert panel was not expected to arrive at a consensus for the exact nature of a desirable future. But as a broad view, they all recognised a need for a monetary system that:

- Increases, not decreases, equality
- Mitigates, not advances, global warming
- Protects, not erodes, privacy
- Governs, not controlled by, BigTech
- Promotes long-term, not unsustainable, economic recovery
- Ensures a diversified, not singular, monetary system

This chart shows the desirable scenarios selected by the three experts involved in the exercise. The different coulours show diferent individual choices. They did not reach a consensus but there is a strong convergence of views.

Tensions	Economic Recovery		Society		Sustainability		Technology		Money	
Variables	Security and resilience of supply chains	Economic Recovery	Social priorities	Surveillance vs freedom	Trajectory of Global Warming	Distribution of wealth	Governance of platforms	Digital data ownership	Issuance of Money	Payment Instruments
VALUE 1	Strengthen BCP	Post-WW2 global institutions lead recovery	Equality	No surveillance	Mitigation	Efforts to reduce divide between rich and poor countries	States control platforms	Individuals own their data	Central Bank	Digital only
VALUE 2	Relocate Sourcing & Production	Local recoveries	Economic growth	Regulated surveillance	Adaptation	Efforts to reduce inequality within countries	Regulated platforms	States control data	Commercial Bank	Fragmen-tation
VALUE 3	Diversify sourcing	Regional governance leads comeback	Individual rights	Surveillance capitalism	Uncontrolled	Increasing inequality	Unregulated platforms	Private corporations sell data	BigTech	Diversifi-cation
VALUE 4	Sovereignty is back	Global recovery lead by few competitive regimes	Transfor-mation	State Surveillance	Denial	Fragmen-tation	Platforms control states	Data is the new currency	Anyone	Cash

"A profusion of new payment methods and issuers of money could also have a perverse impact on social dynamism by further fragmenting and ghettoising certain communities and regions. More sophisticated and differentiated monies might be used to discriminate and reinforce the existing correlation between hierarchies of creditworthiness and social status."

— Miller R., *The Future of Money* (2002); OECD

7.
The Future starts Now

In this final stage of this futures literacy process, we look at the concrete actions that need to be implemented today in order to achieve the desirable scenario. What policy decisions and what investments are required for the scenario to become reality?

We have identified four key areas.

1. **Infrastructure:** we need an efficient and resilient infrastructure to ensure access to, deposit of and acceptance of cash. All stakeholders including banks and retailers need to fully understand the implications of a changing landscape in terms of competition, or in terms of financial inclusion. If the infrastructure were to disappear, it would be very difficult to rebuild.

2. **Cash Cycle Models:** if market forces fail to guarantee the infrastructure, central banks should consider alternatives including increasing their direct involvement, increasing subsidies to stakeholders and/or regulation. New business models should be sustainable and profitable for all stakeholders, whether they are value-based or utility-based.

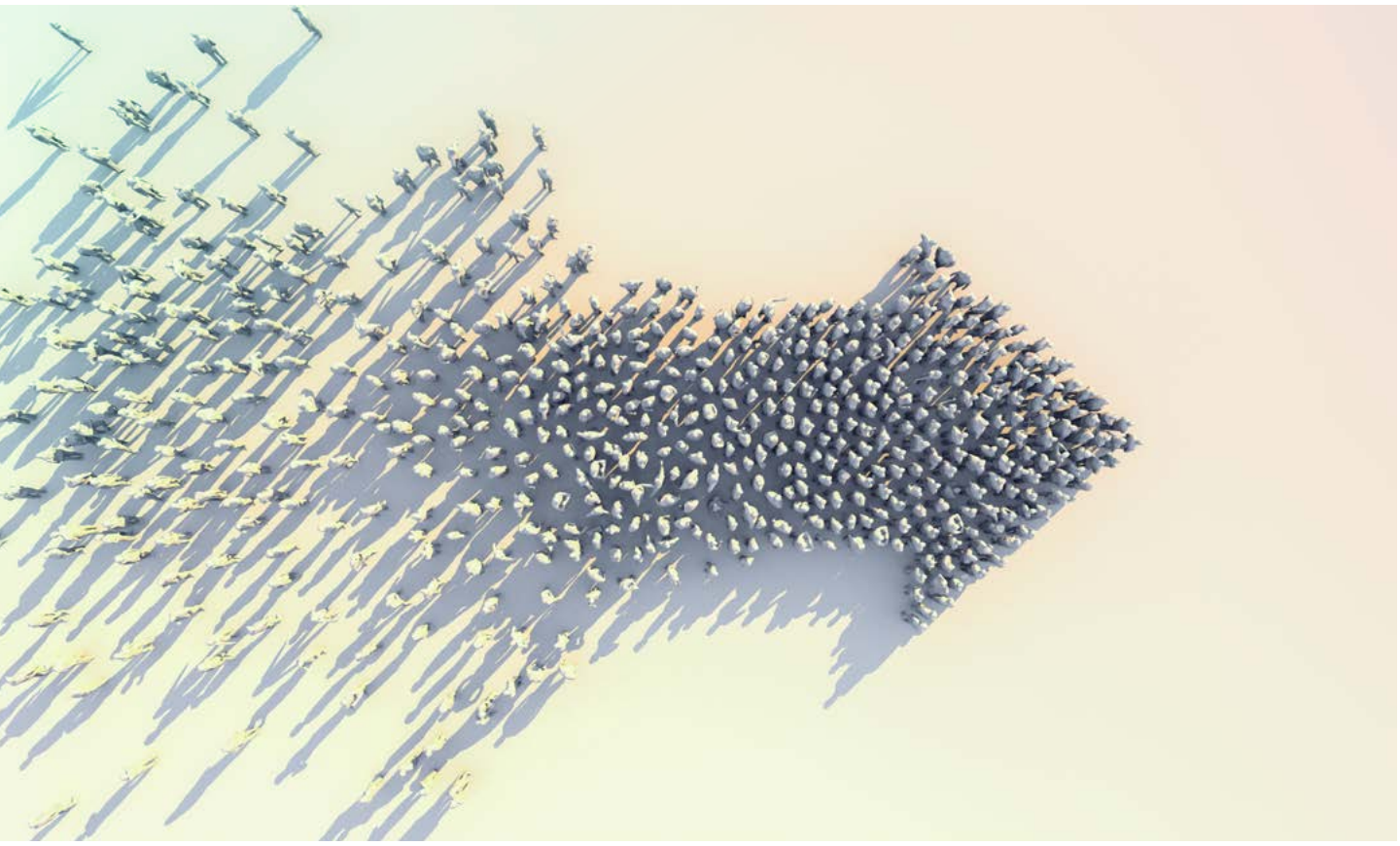
3. **Communication:** we need to explain why cash is an important part of public infrastructure. Governments and central banks should consider giving up their neutral position towards cash and develop a positive argumentation in favour of cash.

4. **Research:** research starts with improving the level and quality of statistical information to better understand cash usage. Research is required on payment behaviour, the motives for holding cash and on the resilience of cash in disaster recovery. The pandemic has demonstrated the need to better understand the role of cash in the transmission of viruses and pathogens. The research needs to be published and shared with the scientific community.

8.
In conclusion

"In this time of crisis, we face two particularly important choices. The first is between totalitarian surveillance and citizen empowerment. The second is between nationalist isolation and global solidarity."

— Yuval Harari



In our view, the Future of Cash is not merely a competition between cash & digital, nor limited to payments only. The discussion should not be focused on technology (form) but rather on the social and economic role (function) of money.

To further this view, we asked three questions at the beginning of this paper. Let´s review our answers.

→ Will cash survive?

The futures literacy exercise shows that the nature and governance of money is one of the key tensions that will shape the future. Will the form of money be exclusively digital in the future or will it be diversified? Will it be issued exclusively by private actors or will central banks reclaim a monopoly on the issuing of money?

We believe that even if a future without cash is possible, it is not probable as it would create a number of negative outcomes, including in terms of efficiency, inclusion, fairness, resilience, and the protection of privacy.

→ Should cash survive?

Today, the commonly accepted narrative is that the economic and social role of cash is declining. This is met with two main policy responses: one has been to accelerate its demise by nudging people to adopt digital forms of money. The other has been to slow it down because some people are being left behind by digitalization thus creating a digital divide. We believe in neither. Cash has a proven history of being able to evolve and needs to evolve in the future.

We believe that cash should co-exist alongside alternative forms of money because it provides a much-needed diversification and a safeguard against some of the threats and challenges posed by digitalisation.

It protects individuals' right to privacy against surveillance capitalism. It protects the most vulnerable against the digital divide. It provides a space of freedom including against authoritarian regimes. Some countries are accelerating their investigations of a central bank digital currency (CBDC), but it remains largely unclear whether a CBDC could effectively replicate some of the unique attributes of cash (anonymity, inclusion, resilience).

The issue is not just consumer-driven, it is also policy-driven. If governments agree that cash is an essential part of a well-functioning society, the answer is simple.

We need to ensure a future-proof and sustainable cash ecosystem. This requires progress in four key areas: the infrastructure to ensure the smooth and efficient circulation of cash throughout the economy; the cash distribution models to strike a balance between market-driven and public forces; communication to educate the public on the social and economic role of cash; research to improve our understanding of how cash is used and foster further innovation.

We already see innovation such as CashTech emerge as a growing number of innovative companies are leveraging software and modern communication technologies to improve access to cash, acceptance of cash and the efficiency of the cash cycle.

In this paper we have sought to challenge the singular future narrative of increasing uniformity, across money and payments, decreasing choice and leading to digital-only future. We have done this by proposing a novel approach to building scenarios based on credible, alternative development paths, events and actions leading to very different futures, some desirable, some less so.

If anything, recent years have proven the non-deterministic nature of the human life. But also, the infinite human potential to shape events and our very own future.

References

Auer R, Cornelli G, and Frost J (2020): *Covid-19, cash and the future of payments*, BIS Bulletin N°3, April 2020. Available at https://www.bis.org/publ/bisbull03.pdf

Auer R, Cornelli G, and Frost J (2020): *Rise of the central bank digital currencies: drivers, approaches and technologies*, BIS Working Papers N° 880, August 2020. Available at https://www.bis.org/publ/work880.htm

Beretta, Edoardo; Neuberger, Doris (2020): *Institutional hostility to cash and COVID-19*, Thünen-Series of Applied Economic Theory — Working Paper, No. 166, Universität Rostock, Institut für Volkswirtschaftslehre, Rostock

CashEssentials (2020), *Cash and Coronavirus — a Communication Challenge*. Available at https://cashessentials.org/cash-and-coronavirus-a-communication-challenge/

CashEssentials (2021), *CashTech: Taking Cash Forward*

European Central Bank (2020), *Study on the payment attitudes of consumers in the euro area (SPACE)*. Available at https://cashessentials.org/app/uploads/2020/12/ecb.spacereport202012bb2038bbb6.en_.pdf

Heinonen A. (2020), *Banknote Developments at the Global Level — Before and After the Outbreak of Covid-19*, Currency News Volume 18 — N° 9 / September 2020. Available at https://cashessentials.org/banknote-developments-at-the-global-level-before-and-after-the-outbreak-of-covid-19/

OECD (2002) *The Future of Money*. Available at http://www.oecd.org/futures/35391062.pdf

mashka.ch / avalanche.studio

CashEssentials

cashessentials.org