

CBDCs: SHOULD THE END-USER SHAPE THE FUTURE OF MONEY?



As part of our ADGMA Research Centre Insights Series, we are publishing adapted articles from amongst our strategic collaborators. This article is republished with the kind permission of FNA. It follows our own recent article where we sat down with Professor Alistair Milne and Ronit Ghose to discuss the [Future of Money: Monetary Revolution or Evolution](#). With the article below by Carlos León, we share another opinion on this fascinating topic with a look at CBDCs.

After sixteen years as a researcher at a central bank, I moved to the tech industry. It wasn't long before I realized the craftsmanship that's required to build valuable products, which involves the process of strategically and carefully conducting every stage of the product lifecycle—from ideation, research and development to testing and go-to-market. My knowledge about viable product creation is still modest but it is enough for me to realize that central banks do not think of CBDCs as a product; that is, with the end-user in mind.

This is not surprising. Central banks are the sole responsible party for price stability, which they pursue by managing the money in circulation. And, unlike traditional firms, their performance is not measured by quarterly earnings but by their ability to preserve the currency's purchasing power.

Central banks have exerted power over the economy for decades. For instance, their products to financial and non-financial firms (e.g., foreign exchange regulation, liquidity requirements) have been enforced by means of supervision. Similarly, cash has been massively adopted mainly because it has to be accepted if offered in payment of a debt – in what is known as legal tender. Subsequently, network effects have made cash rather resistant to digital forms of money.

All in all, their monopolistic status and not-for-profit nature have allowed most central banks to think about money without considering the users' needs and their willingness to adopt it. Until now. Enter retail central bank digital currencies (CBDCs).

CENTRAL BANK DIGITAL CURRENCIES (CBDCs)

Simply put, CBDCs are a digital version of cash, available to all agents in the economy. As cash and reserves at central bank accounts, CBDCs are public forms of money, issued by central banks. Public forms of money have long coexisted with private forms of money. Deposits at commercial banks are the prevalent type of private money, which we use when paying with a debit card or making an electronic transfer.

CBDCs' allure overlaps with the interest in new private forms of (pseudo) money, namely cryptos – such as bitcoin – and stablecoins. Although these new private forms of money do not conform with their expected classic functions (i.e., means of payment, store of value, and unit of account), they have pushed both central and commercial banks to think about money. Most likely, cryptos and stablecoins will never become monies but it is clear that they have sparked a long overdue revision of what we think money is and should be.

Nevertheless, the rise of cryptos and stablecoins looks like a rather weak problem statement to kick-start the CBDCs design process. And it is apparent that the problems that a CBDC could address have been or are being solved by other means, such as retail instant payments systems (e.g., Central Bank of Brazil's PIX, National Payments Corporation of India's UPI, Swish in Sweden, Bizum in Spain), mobile-based payment services (e.g., Safaricom's M-Pesa in Kenya), or electronic money institutions (e.g. Paypal, Wise). This is why the now infamous “a solution in search of a problem” statement has been repeatedly raised against CBDCs. Yes, there have been a few pilots and implementations around the world, but most central banks are still trying to make sense of CBDCs while studying the risks and implications of their rollout.

But one thing is certain. When rolled out, CBDCs will compete with cash and private forms of money. Therefore, CBDCs adoption will largely depend on how well they satisfy end-users' needs vis a vis other forms of money and their related payment systems. Interestingly, the low and slow adoption of the e-Naira, the sand dollar, and jam-dex (i.e., the CBDCs from Nigeria, the Bahamas, and Jamaica) and the weak adoption in the e-Yuan pilot in China strongly suggest that adoption is rather elusive. Most likely, the use case has not been studied and incorporated in the design of those first CBDCs.

TAKING THE END USER INTO CONSIDERATION

Most present-day CBDC programs do not have the end-user's needs and capabilities in mind. Discussions about CBDCs revolve around central banks' own motivations to roll them out. Such motivations include financial inclusion; monetary sovereignty; payment efficiency; payment system redundancy; reducing the market power of private forms of money (from bank deposits to cryptos) and providing a digital version of cash. But, again, those motivations have been or are currently being addressed by other means, such as retail instant payment systems.

Product-led firms, such as Apple, Google, JP Morgan, Visa, and Mastercard, aim at massive adoption, which depends heavily on how they fulfil the end-users' needs and expectations, and most importantly, how they do it better than the competition.

Surely, there are additional complexities to rolling out CBDCs that private companies don't have to navigate. For starters, central banks have explicitly decided not to aim for massive adoption as a large-scale migration from commercial bank deposits to CBDCs has the potential to threaten financial stability. But low adoption would represent a failure for central banks, as their reputation and resources are on the line. Thus, central banks are hoping to find a “sweet spot” between great success and dismal failure – a daunting task if not properly executed.

Additionally, central banks' decision-making is based on standard economic reasoning and modelling. This entails assumptions that any product-led firm would find ridiculous at best, such as "individuals are homogeneous and rational." We all know by now this is far from reality, and that users' behaviour when facing a new form of money will be mostly driven by their heterogeneous emotions regarding how it fits their needs and expectations. However, most central banks' research about CBDC adoption and impact are based on top-down approaches, in which homogeneous agents maximize their utility functions in an abstraction of how consumers and merchants meet and learn in the retail market and choose from different available payment instruments to settle their transactions.

Central banks' traditional top-down models are not designed to integrate the end-user's heterogeneous and emotional expectations or needs into economic modelling; in fact, their main assumptions neglect the very essence of human behaviour. Bottom-up approaches (e.g., agent-based modelling, game theory) are better suited to integrate what we know about end-users (from surveys, market research, interviews, and A/B testing) to better simulate and model how adoption occurs under CBDC design choices, such as anonymity, remuneration, balance caps, know-your-client, etc. Therefore, considering the competitive landscape and risks in line, it would make sense that central banks develop CBCDs under the principles and techniques used by product-led companies.

That is, the modelling and design of a CBDC as a new form of money should implement a user-centric approach. When thinking about CBDCs adoption, central banks should start thinking more like Apple or Google, and less like a traditional financial authority that relies on its legal dominance to put a product into the market. As usual, this requires a product development process with the following high-level steps: i) ideation, ii) market research, iii) customer discovery / user research, iii) product discovery – design, build, test, and iterate, iv) go-to-market and v) measure and adjust. In my view, this process is very close to the scientific method but applied to business problem-solving.

The key question regarding CBDCs is whether central banks are willing (and ready) to adopt this experimental mindset to create a new form of public money. It is definitely uncharted territory for them. Although some central banks have traversed this uncharted territory when developing retail instant payment systems in Brazil and India or when running large-scale CBDC pilots in China, I am unsure whether all of them are willing to take the same course of action. The one thing I'm sure of is that drawing the traditional legal tender card to force CBDCs' acceptance will not suffice, as evidence from Nigeria, Bahamas, Jamaica, and China's pilots has shown. Not only will legal tender by itself not achieve the sweet spot central banks are looking for but it will also be a missed opportunity for them to be better equipped for shaping the future of money.



Carlos León,

Ph.D. in Finance,
Director of FMs & Digital Currency Solutions,
FNA (Financial Network Analytics)