

Louvain School of Management

The central banks' evil plan

What if digital banks were a gateway to Central Bank Digital Currencies?

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Glossary

BIS – Bank for International Settlement

CBDC – Central Bank Digital Currency

CBDCs – Central Bank Digital Currencies

ECB – European Central Bank

FED – United States' Federal Reserve

KYC – Know Your Customer

PSPs – Payment Service Providers

SVB – Silicon Valley Bank

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Introduction

Throughout the ages, the banking sector has experienced numerous transformative changes. Most recently, the digital revolution has induced fast-paced innovation and led a new class of institutions to rise and capitalize on this opportunity. Meanwhile, in the last few decades, central banks have seen their powers erode, the firm grasp they once held on to money slowly flaking off. Determined to take advantage of the new wave of opportunities brought by digitalization, their response takes on the form of new currencies with never-before-seen properties. The possibilities they bring are endless, and this revolution very well might bear the largest alterations to money the world has yet to experience. This new shift, however, raises a set of concerns, especially as digital banking seems to have perfectly paved the way for central bankers to introduce their new idea. What if digital banks were merely a gateway to these new currencies, acting as a steppingstone in what could be the central banks' evil plan towards regaining the once unwillingly relinquished control?

The purpose of this thesis is to offer a new perspective on Central Bank Digital Currencies and their implications. Succeeding at this objective requires the scope of this project to mainly focus on the potential adverse effects of a widespread implementation of CBDCs. The ultimate aim is to provide a set of considerations to safeguard the banking industry and the freedom of users. This thesis is evidently taking a bias by narrowing down on negative outcomes of CBDCs. This bias primarily serves the purpose of tackling a gap identified in the literature and shedding light on the potential drawbacks of such a technology. The overarching objective is not to take on the impossible task to deter central financial authorities from implementing digital currencies but to raise awareness of the detrimental consequences. Protecting money-related freedoms citizens enjoy is especially crucial as a crackdown on money could jeopardize the very nature of democracies and strike an irreversible blow to the privileges the population cherishes. To look after the interests of the general public, this thesis will explore history, the existing literature, and critically build upon the grand ambitions of the world's leading central banks. Moreover, this thesis partly relied on the works of banks and authorities in the field instead of the lagging academic literature to deliver a state-of-the-art and comprehensive critique.

The first part of the thesis describes retail banking and depicts the state of the sector as a whole. While this section will explain the different financial services offered by retail banks, the focus

of this thesis does not reside in the products themselves as much as how they are delivered to users. It is crucial to lay adequate foundations as the rest of the thesis will build upon the observations from this part of the research. Although retail banking is in the midst of major changes, its core functions are expected to stay the same for the foreseeable future, making it essential to have a solid understanding of the sector as a whole.

The second part aims to provide an argument for digital banks being a worthy successor to traditional retail banks. The history of banking, once rooted in physical presence and face-to-face interactions, is undergoing a transformative shift due to the rise of digital banks. Even though legacy banks have desperately tried keeping up with digitalization, this wide array of new actors does not abide by the same rules and has carved itself an ever-growing chunk of market share, capitalizing on this slow-moving industry's blind spots. This new class of institutions poised for rapid growth however is not exempt from its own set of challenges.

The third part lifts the veil on most central banks' true ambitions. Central monetary authorities have not kept secret their aspirations for more control over transactions and the way money flows. For centuries, money has served as a unit of account, a store of value, and a medium of exchange. Yet, central banks now contemplate adding a fourth function. As fiat currency gives way to digital counterparts, they are developing a new kind of currency set to revolutionize the industry. But could this seemingly well-intentioned tool hide a truly nefarious plan?

The emergence of Central Bank Digital Currencies is reshaping the financial landscape. The fourth and last part of this thesis has for objective to build upon the nefarious sides of the soon-to-be-implemented CBDCs, providing food for thought and considerations ambitioning to guarantee the safety and freedom of users. As society faces the prospect of deep-rooted transformative changes, all hopes of ensuring individual freedoms are not lost. Citizens must, however, critically evaluate the power ceded to central banks and avoid willingly embracing their deceptive masterplan potentially hiding Machiavellian intentions.

Finally, the conclusion provides a summary of the key pivotal points and addresses the much-needed further work opportunities this thesis opens. This closing section ultimately ties together the threads of the investigation and answers the research question, shedding light on the mechanisms behind the introduction of these digital currencies. Is an evil agenda really at play?

Part 1: Banking fundamentals

- What is a retail bank?

First and foremost, it is essential to define what a retail bank and its products are. Banks are usually vast financial conglomerates of many trades, but this body of work focuses on retail banking activities. Also known as consumer or personal banking (Majaski, 2023), they are defined by the range of products they offer to customers and the general public. These activities mainly consist of providing financial services to individuals and small to medium-sized companies, leaving larger corporations aside for more tailored solutions. In a nutshell, they enable these actors to manage and deposit their money and access credit (Pond, 2017).

The range of products provided usually features checking accounts and certificates of deposit, debit and credit cards, personal loans and mortgages. Though nowadays, due to numerous mergers and acquisitions, banks often have acquired the capacity to provide more services such as investment solutions or insurance and pension funds. Moreover, all products may be separated into the categories of interest-based and non-interest-based. The former constitutes the traditional product offering and consists of accepting deposits and lending money, collecting the spread in interest as a primary source of income. The bank effectively acts as a middleman and intermediates between borrowers and lenders to efficiently allocate funds. The latter includes the suite of financial services banks offer to customers such as insurance, investments, or pensions. These products generate revenue through commissions or fees instead of interest (Pond, 2017 & Majaski, 2018).

In essence, checking and savings accounts are widespread tools for the general public to safely store money, fuel day-to-day activities and collect interest on excess liquidity. Debit and credit cards enable transactions and easy access to the aforementioned accounts. Loans and mortgages equip individuals with larger buying power and render larger purchases such as a vehicle or housing feasible, further fueling daily needs. There are numerous variations of these product categories, with for example three variations of the checking account being the current account, associated with cards and featuring no interest, the deposit account offering interest, and the term savings generating more interest but at the drawback of funds generally being locked in for a certain period of time. Furthermore, the range of products a given bank offers varies between countries due to demand and applicable legislation (Pond, 2017 & Majaski, 2018). All

of these variations and intricacies, however, are not the main focus of this thesis, which is more concerned with how these products are offered to the general masses.

All registered banks have to comply with a set of legislations to ensure their soundness and stability, the permanence of funds and hinder facilitating criminal activities. While many local legislations have a prevalent role, the most widespread body of regulation consists of the Basel Accords, spread over three volumes (Pond, 2017). The Basel Committee on Bank Supervision was founded in 1974 and its latest agreements to date, Basel III, find their roots in the need to fine-tune liquidity requirements as a means to avoid bankruptcies experienced during the Great Financial Crisis of 2008 (Chen, 2022). At the time of writing, Basel IV has not yet been fully implemented in the European legislation (National Bank of Belgium, 2022). With the recent events of multiple banks going bankrupt, namely Silicon Valley Bank because of poor risk management and regulatory failure (Thomadakis, 2023), or Credit Suisse due to prior scandals and contagion from SVB (Reiff, 2023), it is highly likely that future regulation will address these failures. Although it might appear contradictory, deregulation in the form of removing barriers to entry and enabling banks to engage in new financial activities is vital. It benefits the end-consumer by increasing competition, ultimately leading to a greater choice between different options (Pond, 2017).

- The retail banking landscape

Throughout the ages, banks have always existed in some form. First, religious temples' undergrounds were used to safely store excess money, relying on the presence of priests and heavily armed guards. Under the Roman Empire, banks branched out to become institutions on their own, becoming increasingly prevalent by offering loans and other financial services. Carrying into the Middle Ages, monarchies relied on banks to fund state operations and wars, some over-leveraging to the point of causing widespread bankruptcies and financial turmoil. Adam Smith revolutionized the sector by introducing its free-market banking theories, limiting the involvement of governments. It ultimately planted the seeds of free-market capitalism that took root in the fertile soils of the freshly established United States of America (Beattie, 2023a).

The period that lasted into the 1920s saw the rise of merchant banks in the likes of Goldman Sachs, J.P. Morgan & Co, Loeb & Co. These institutions were soon to become large financial conglomerates, and as corporate financing needs skyrocketed, initial public and bond offerings

became the main source of funds. The era was marked by the collapse of 1907, during which J.P. Morgan & Co positioned itself as a savior, bailing out many institutions. This led John Pierpont Morgan to advocate for the government to create the Federal Reserve Bank, inaugurated at the end of 1913. These efforts however were proven vain in face of the 1929 stock market crash that caused around 9,000 banks to go out of business, rendering the FED unable to provide adequate help to all institutions. As crises are never wasted and are the opportunity to address regulatory gaps, protection measures were launched, and the cycle has repeated itself every time a crisis struck (Beattie, 2023a).

World War II saw the advent of modern banking. Financial institutions had to answer to the enormous financing needs of the military industrial complex, creating prosperous perspectives and spurring mergers to create conglomerates big enough to meet the insatiable demand. It ultimately marked the beginning of modern banking due to mass adoption and access to financial services by the average citizen, benefiting from loans and insured deposits. The sector's following revolution came in the late 20th century with the rise of widespread online banking. The demand further grew as smartphones became more popular and an increasing number of firms and individuals were ready for an all-digital era (Beattie, 2023a).

Today's retail banking landscape is characterized by a plethora of large international corporations, accompanied by a myriad of smaller banks operating locally. In 2023, the global retail banking sector was valued at USD 1,936 billion and is expected to feature a compound annual growth rate of 5.6% until 2030. Major actors include the previously mentioned J.P. Morgan Chase & Co, Citigroup, Bank of America, HSBC, and Deutsche Bank among many others (Grand View Research, 2023).

Financial institutions are heavily influenced by macroeconomic cycles, and banks are no exception. The recent events of the Covid-19 pandemic took a toll on banks, impacting performance. Less diversified and undercapitalized banks experienced more adverse effects, while larger corporations benefited from this opportunity to fortify themselves and adopt adequate requirements (Xiazi & Shabir, 2022). Moreover, all banks were all the more incentivized to further adopt digitalization and the institutions enjoying the best capabilities experienced the most growth in user base (Markey et al., 2020).

- Part summary

The first section of this thesis lays the groundwork by detailing the core functions and products offered by retail banks. Primarily focusing on consumers, retail banks play a pivotal role in providing financial services to individuals and small to medium-sized companies, offering a means for managing and depositing money, as well as accessing credit.

The array of products provided encompasses traditional offerings like checking accounts and certificates of deposit, alongside modern services such as investment solutions and insurance, reflecting the impact of mergers and acquisitions within the banking sector (Majaski, 2023; Pond, 2017). These products fall into the categories of interest-based, involving deposits and lending with interest as the main income source, and non-interest-based, consisting of services generating revenue through fees or commissions. Checking and savings accounts serve as widespread mechanisms for individuals to securely store money and accrue interest on excess liquidity, while debit and credit cards enable seamless transactions and easy access to accounts (Pond, 2017 & Majaski, 2018). Loans and mortgages empower individuals with greater purchasing capacity for significant investments.

Throughout history, banking has drastically evolved, from the underground storage of money in religious temples to the modern era characterized by large international corporations and widespread digitalization (Beattie, 2023a). From the cyclical nature of crises stems the need for strong regulations to ensure the stability and integrity of financial institutions. Among the numerous frameworks aimed at preventing bankruptcies and guaranteeing fund safety, the Basel Accords stand among the most predominant (Chen, 2022; National Bank of Belgium, 2022). The essential role of major financial institutions cannot be underestimated. The recent Covid-19 pandemic exemplifies how adequate measures on a firm level, such as strengthened digitalization, can ensure short and long-term stability (Xiazi & Shabir, 2022; Markey et al., 2020).

Part 2: The era of digital banking

Throughout history, banking institutions have been characterized by their physical presence. For centuries, they comprised at least a building sheltering employees and vaults, to serve customers and secure their funds. Digital banks however are the revolution chipping at this image, and physical banks are on the decline (Schmidt-Jessa, 2022). Powered by the widespread adoption of the internet and global digitalization, it was only natural for these disruptive players to come and shake up the banking sector.

- What are digital banks?

In an effort to simplify, all digitalized, digital, and neo banks can be grouped under the term ‘digital banks’ or ‘digital banking’, despite their differences in nature and the way they operate. They share similar characteristics in being internet based and not solely relying on physical presence in the form of local agencies. Instead, customers increasingly access competitive interest rate checking accounts through digital banking and mobile apps. Regrouping them enables analyzing their impact more than focusing on the out-of-scope granular differences (Taneja et al., 2024).

These institutions emphasize low fees, streamlined services, and minimal requirements to ensure a superior user experience and broad appeal. Despite being purely digital, users are still able to withdraw cash at automatic teller machines thanks to partnerships with legacy banks. Neo banks usually are non-licensed institutions or FinTech companies building on top of existing banks to provide financial services (Sharma, 2024). They effectively partner with a bank much like a company could use an existing telecom network to offer its mobile services. In addition, they tend to heavily specialize and offer a niche suite of services to customers, the focus being on providing a faster and cheaper option (The Impact Investor, 2023).

On the contrary, banking digitalization concerns full-fledged banks that transition and open to operating digitally (Taneja et al., 2024). In some instances, digital banks are the online division of a legacy institution. They provide the best of both worlds to users still attached to the possibility of having in-person interactions and assistance at their local agency (The Impact Investor, 2023). Alternatively, the term digital banking regroups under its umbrella both online

banking, accessing bank features on a web browser, and mobile banking, using a mobile app for those same bank operations (Napoletano, 2021).

There exist hundreds of digital banks, with at least 462 created since 2014. The most valued one, Nubank, mostly operates in Brazil (Statista, 2023) and was introduced to the stock exchange at the end of 2021. The initial valuation of more than 52 billion at the time of the public introduction has climbed to USD 64 billion and is still increasing (Stock Analysis & NYSE, 2024). Other well-known actors in the digital banking space include Revolut and N26 in Europe, SoFi and Marcus by Goldman Sachs in the United States and finally WeBank and Digibank in Asia (Gujral et al., 2019). The majority of digital banks generate income primarily from transactional fees and interest, rather than relying on supplemental revenue from cross-selling insurance plans or mortgages only to name a few. The sector of online banking is expected to grow significantly over the next few years. Retail banking income in 2023 amounted to USD 1,936 billion and was forecasted to reach USD 2,840 billion in 2030 at a compound annual growth rate of 5.6% (Grand View Research, 2023). Meanwhile, digital banking's 2024 net income is expected to tally USD 822.5 billion and grow at a rate of 10.34% annually until 2028, ultimately reaching the USD 1,219 billion target (Statista, 2023 & 2024).

In essence, both digital banks and neo financial institutions represent a disruptive force impacting the retail banking sector. The accent on digitalization and online user experience nurtures a customer base that expects 21st-century solutions to personal banking. Most of these institutions envision an exclusively digital future, hence the relevance of considering their global impact on the banking sector instead of the minute differences between the two main categories.

- The outlook

While digital banking has grown increasingly popular and is well underway to become the leading form of banking, the sector still has to overcome multiple hurdles and challenges.

First and probably most importantly, digital banks have notoriously struggled to reach profitability (Schmidt-Jessa, 2022). In the spirit of many tech companies, growth is fueled by rounds of funding providing financing to grow operations and acquire customers, often at a loss (Blakey, 2023). With the main selling point of digital banks being lower fees, free of charge

accounts and attractive rates, revenue is hard-pressed to cover expenses. Most banks have to resort to generating revenue from transaction fees and interest income rather than providing other products or services. Further contributing to low profitability is the fierce competition institutions face (Statista, 2023). The ruthless battle to gain customer interest and market share often pushes them to develop new products and offer record incentives to prospective customers, usually in the form of sign-in cash bonuses and generous referral programs (Horton & Enloe, 2024). As consumers' preferences change, key selling points like customer journey evolve in parallel. User experience is increasingly important since, in an all-digital bank, the online or mobile apps are the sole points of contact between the customer and the bank. Furthermore, they have to feature adequate robustness against bugs and as low downtime as possible as they are every customer's only access point to their hard-earned money (Gujral et al, 2019).

The second enormous challenge facing digital institutions is regulatory compliance. It is notoriously difficult for financial institutions to comply with ever-more stringent regulation tackling stability, anti-money laundering, personal data protection and more. Institutions operating online suffer even more from regulatory pressure as they have to abide by the two bodies of legislations, applying to banking and digital financial operations (Gujral et al, 2019). The hurdles are even bigger as, to gain traction, many companies are forced to expand to multiple countries, therefore exposing themselves to additional local regulations. Some digital banks might however have an edge over neo banks as they take advantage of the backbone of legacy banks providing expertise and existing regulatory compliance (Statista, 2023).

A third challenge, although bearing less impact, has to be people's reluctance to migrate towards a cashless society. The interpersonal interaction of handling cash is still ingrained and embedded in the lives of many as it accounted for 59% of point-of-sale transactions (European Central Bank, 2022b) and most attempts at suppressing its prevalence have faced backlash (Vyas, 2021). The rejection may be explained on the basis that cash is still less costly than the digital alternative for payments under 25 euros (BIS, 2021). A second plausible explanation resides in the fact that it contributes to discriminating against swaths of the population, particularly the less fortunate who still do not have access to banking services (Vyas, 2021). Ultimately, others fear that a cashless society would yield even more control to institutions, hindering access to a readily convertible physical asset (Stanley, 2023 & Jeong, 2016).

On the other side, digital banking enjoys huge advantages that have fueled its fast growth. The ultimate equalizer of new technologies has always been adoption, and, in that sense, the outlook appears promising. Digital banks have been able to capture the interest and offer a compelling solution to the needs of a younger and more tech savvy audience. Mainly composed of Gen Z and millennials, of ages up to 50 years old (Statista, 2023), they prioritize online customer experience and are more inclined to enjoy an all-digital solution. As customer experience is becoming a driver of growth, the emphasis on flawless interactions within the app is crucial and has propelled many digital banks to new heights. The gap with solutions offered by legacy banks is widening as most are at a stage of improving their often clunky and unpleasant solutions. In some instances, their digital counterparts are years ahead, having reduced to minutes the time needed to open an account, compared to days for legacy banks (Gujral et al., 2019).

The second biggest advantage is the low-cost structure of online operations. Most digital banks benefit from massive economies of scale and very low overhead, offering perspectives of profitability once the customer base becomes significant (Statista, 2023). They also gain a competitive advantage by enabling lower fees and providing tailored services, further improving the aforementioned all-so important customer experience.

As a way to conclude this segment of the thesis, drawing a parallel with the music industry's recent evolution might offer a compelling view of what is to come for the digital banking sector and banking as a whole. Music listeners used to purchase albums of songs bundled together on CDs by a few select record labels. Then came the advent of the internet, which revolutionized the sector. Many records failed to take the turn of individuals both wanting to own their music in a dematerialized manner and not being confined to purchasing a whole album when only a few songs were of interest. Once huge, market concentration hit rock bottom and bankruptcies amassed as consumers willingly turned to owning digital music and critics were certain, this was the end-all-be-all of the music industry (Gujral et al., 2019).

Little did they know, another heavily transformative revolution was on the horizon, and it took the industry by storm once again. Streaming services appeared, offering a new way of consuming music, this time, without any ownership. Customers are merely renting the rights to listen to songs, accessing music through a subscription. Today, 67% of the US's music industry revenue comes from streaming (World Economic Forum & Statista, 2023). Market

concentration has spiked as few companies are making it in this cut-throat low margin environment. The five biggest streaming platforms account for 80% of market share with the biggest one, Spotify, raking in 31% (Forde, 2022). Consumers are getting accustomed to not owning music but renting access.

What if the banking industry followed the same arc? Throughout history, market concentration was quite high as banks enjoyed a form of oligopoly, and slowly decreased as more actors entered the market. Services were usually bundled together and for most people, the norm was to bank and grow inside a single entity, creating a history, and depositing funds in hopes of being granted a loan when needed. Bank loyalty was at its peak. Then, as time went on, digital banks appeared, and people started enjoying the fruits of competition and de-bundling. Institutions are becoming forced to ruthlessly compete against one another to capture customer interest. Personal finance is democratized, investing and money management simplified, banking access normalized. Customers do not have to be loyal to a single institution anymore, they are free to seek the best opportunities and combine them as they wish, opening a savings account with the institution offering the best rates, taking on a loan with another, investing with a third and managing daily spending with a fourth offering cashbacks and bonuses.

Unaware customers are getting used to digital banking, access and management of their finances within a fingertip's reach, creating the perfect nurturing ground for the next shift. What stemmed from a desire to be empowered and take control of one's own finances is lurking at the horizon, and it is an even bigger revolution. Just like music streaming services reformed the industry, providing music as a service, what if we entered the age of 'money as a service', where people no longer own money but merely have the right to access it?

- Part summary

The history of banking, characterized by a physical presence and in-person interactions, has been significantly altered by the rise of digital banks. Enabled by the widespread adoption of the internet and global digitalization, these disruptive entities have ushered in a new era.

Digital banks and banking, encompassing neo banks and all variations, share commonalities such as internet-based operations and the absence of physical branches. They prioritize user experience, competitive interest rates, low fees, and streamlined services, accessible via digital platforms and mobile apps (The Impact Investor, 2023). While neo institutions partner with existing banks, digital banks are full-fledged licensed entities, sometimes operating as online divisions of legacy institutions (Taneja et al., 2024). The sector comprises a myriad of actors, with Nubank, Revolut, N26, SoFi, Marcus, and WeBank among the notable names (Gujral et al., 2019). Unlike legacy banks, transactional fees and interest generate the bulk of revenue. The sector is poised for significant growth at twice the rate of retail banking, reflecting the shift in consumer preferences (Grand View Research, 2023; Statista, 2023 & 2024).

Despite the surging popularity of digital banking, the industry grapples with profitability challenges (Schmidt-Jessa, 2022). The primary hurdle is the struggle to generate revenue, given the emphasis on low fees and attractive rates (Blakey, 2023). Regulatory compliance poses another significant hurdle, especially for institutions operating internationally (Statista, 2023). Additionally, the perspective of a cashless society faces backlash (Vyas, 2021). Yet, digital banking has catered to and captured the interest of a tech-savvy audience, predominantly millennials and Gen Z (Statista, 2023). Their low-cost structure contributes to competitiveness and promises profitability as economies of scale come into play (Statista, 2023).

Though another revolutionary shift is on the horizon. Just like the music industry once was transformed by the rise of the internet, fostering unbundled music and low market concentration, events took a drastic turn (Gujral et al., 2019). The advent of streaming services has spiked market concentration to new heights, and unaware consumers are getting accustomed to renting music (World Economic Forum & Statista, 2023; Forde, 2022). What if, along with the movement of regression in ownership, the world entered the age of money as a service, where people merely rent the right to access money?

Part 3: The evil plan

You will own nothing and be happy.

- What if central banks had other plans in mind?

For centuries, currencies have been providing a bedrock of three core functions. The first is offering a unit of account, a standardized measure of valuing goods and services. The second is a store of value, enabling the shift of present buying power into the future. The third and last function is to act as a medium of exchange, representing legal tender (Cunningham, 2019).

The institutions in charge of these currencies are the central banks. Put simply, they are the unique kind of financial institution that holds the monopoly over issuing and distributing a country's currency. These usually private entities and their representatives are also responsible for monetary policies and implementing financial regulation. Central banks are effectively the banks for commercial banks and governments, as they legally back institutions and act as lenders of last resort. Through their particular position, they mainly oversee money supply and make necessary adjustments notably by tweaking reserve requirements, the discount rate. In practical terms, central banks wield immense power, issuing bills and coins, and enabling commercial banking, effectively holding a firm grasp on a country's financial sector (Segal, 2022).

These central financial institutions have been looking at introducing a fourth core function, for the first time not defining the currency itself but shaping the impact it bears, a means of social control (Cunningham, 2019). Behind this seemingly scary proposition lies the observation that central banks have failed to provide crisis-free economic stability, and the noble intentions of promoting financial inclusion and income equality. But is this agenda truly as commendable as it appears to be, or do citizens and economists have a right to question the exact intent behind these alterations to the core functions of money?

In reality, the next monetary revolution is already well underway. Most countries have launched their research program, begun the initial trials or even already implemented deep-rooted transformative changes. But what is this revolution, sold to the masses as the epitome of financial inclusion, progressivity and safety and what is it really meant out to be?

- What is a CBDC?

Throughout history, money has taken on multiple forms. Evolving alongside available technology, it went from salt and skins to today's coins, bills and digital accounts, the latter for the first time being intangible (Beattie, 2023b). Most of today's money is called fiat currency because it is not backed by physical assets such as commodities but by the trust people place in the issuing institutions (Chen, 2023). In the last decade, central banks have observed the rise of cryptocurrencies, cryptographically secured digital or virtual currencies (Murry, 2024), and their gradual adoption. This gradual adoption shed light on both the benefits of blockchain-based digital currencies, and the great threat they represented to their monopoly on money issuance. Their response comes in the form of Central Bank Digital Currencies (BIS, 2021).

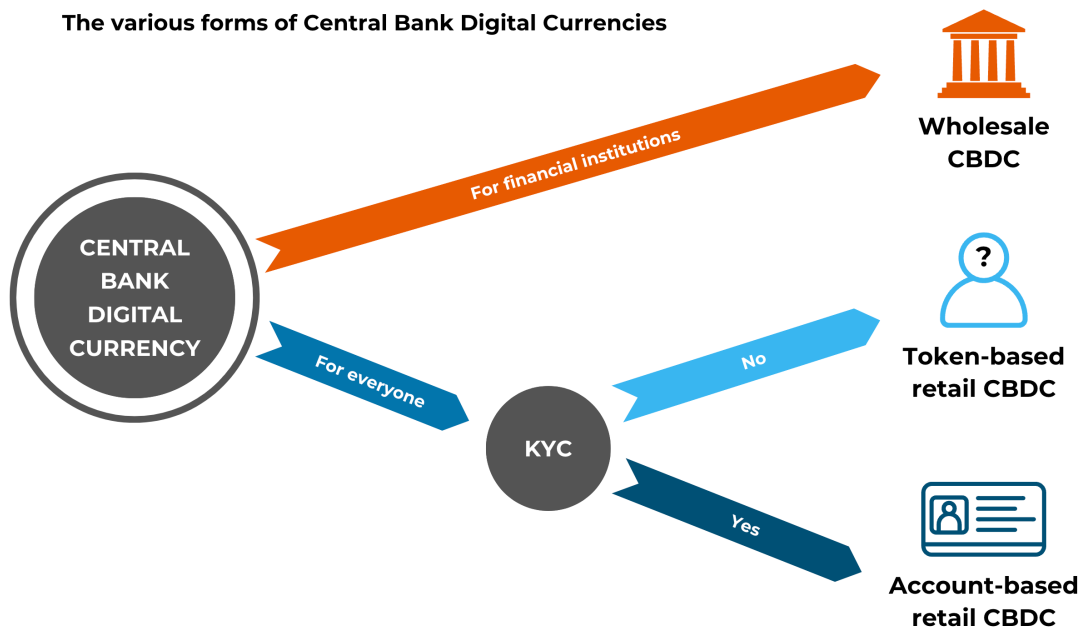
Mimicking some features of cryptocurrencies, CBDCs are digital currencies, meaning that they are intangible and can only be operated in the digital realm. Some models intend to use the blockchain, a ledger in which all entries and transactions are recorded, but multiple design options are considered. Where CBDCs start to drastically differ is that, as the name implies, they are only issued by countries' central banks whereas cryptos are not linked to a single entity. The value of central bank currencies is pegged to their fiat counterpart, money as people know it today (Seth, 2023). An overwhelming majority, more than 130 countries accounting for 98% of the world's GDP, are researching or have already reached a pilot stage of such currencies (Atlantic Council, 2023). The goal of CBDCs is to provide both consumers and businesses with privacy and financial security through convenient and accessible money. The overarching benefits are the low-cost structure for national and cross-border payments and virtually unlimited access to banking. Moreover, they should deter people from relying on cryptocurrencies that notably bear the risk of high volatility.

The world of CBDCs is evolving at a rapid pace and new iterations are rolled out on a regular basis. Among the leading institutions engaged in research, the Bank for International Settlements provides the most comprehensive dichotomy. The BIS is effectively the central bank of central banks and offers assistance in the form of financial services, research and forums for discussion (BIS, 2005). The current literature highlights two main types of CBDCs distinguished by which actors can access and rely on the currencies. The first type is a wholesale CBDC strictly reserved for financial institutions. The inner workings are vastly similar to today's system as banks hold accounts and reserves at a central bank that enables interbank

transfers. Innovative features include the low transaction costs accompanied with fast clearing intra and cross-border and the introduction of payment conditionality such as, for example, the settlement of a payment upon delivery of an asset. This model effectively places the central bank at the foundation level of a clean-slate payment system centered around interoperability.

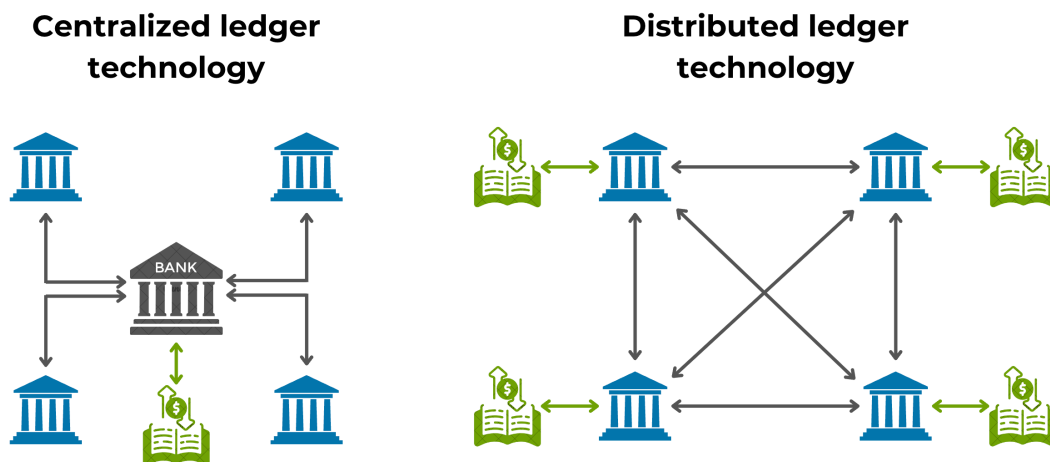
The second type is a retail, or general-purpose CBDC. As the name implies, it is geared towards much broader adoption than its wholesale alternative, effectively affecting the whole population and aiming to be used by businesses and consumers. This system is akin to government-backed digital cash, and just like its physical counterpart, retail CBDCs are a direct claim against the central bank. They protect consumers from insolvency or intermediaries going bankrupt thanks to the supposed infallible central banks' backing. Two variations of retail CBDCs are being explored and differ in the way people access and use funds. The first one is token-based and more closely resembles today's cash by enabling anonymous and off-line transactions through the use of public and private keys (Seth, 2023 & BIS, 2021). Though providing such anonymity is not to every regulator's liking for a broad spectrum of reasons ranging from Anti-Money Laundering supervision to the increased vulnerability to double spending, a form of attack during which perpetrators are allowed to illegitimately spend currency multiple times (Frankenfield, 2023). Moreover, this approach does not appear popular amid added risks of credential theft and loss and complexity in preventing ill-intentioned actors (Banescu et al., 2021).

The second, account-based, is intertwined with a digital identity scheme. This system loosely resembles current processes with more extensive Know Your Customer requirements as government-issued identification is mandatory to access and transfer funds. Identification is a central concept in designing a financial system that enhances safety and guarantees integrity. Compatibility with Anti-Money Laundering and Counter the Financing of Terrorism monitoring needs would rule out anonymity provided by token-based CBDCs. Though these requirements should not come at the expense of privacy, which can be guaranteed by shielding transaction data from commercial and central banks via adequate payment authentication processes and additional overlays. Overall, an account-based approach is likely to be favored due to compatibility with illicit activity monitoring, ease of use and convenience (Seth, 2023 & BIS, 2021).



Graph 1: The various forms of Central Bank Digital Currencies (Source: Author & BIS, 2021)

Both variations of retail CBDCs can be implemented with a centralized or a distributed ledger. The former relies on a single entity, supposedly a central bank, to verify each transaction and the identity of the initiator. The latter builds on a system of nodes spread across participants that synchronously record and verify transactions. Despite the added benefits of redundancy and reduced vulnerability, this poses multiple challenges as nodes would have to be attributed to vetted institutions. Furthermore, it is operationally more complex and will probably be abandoned in favor of the centralized ledger option (Goodell et al., 2021, BIS, 2021 & Nevil, 2023).

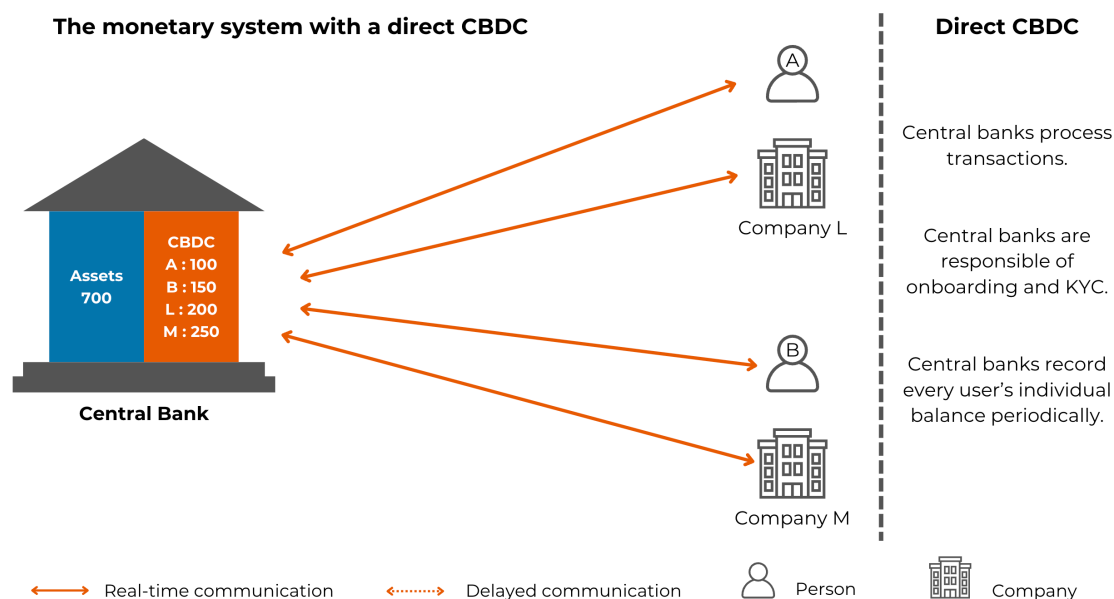


Graph 2: The difference between a centralized and a distributed ledger technology (Source: Author & Aire, n.a.)

On the left-hand side, the central banks stand in the middle of the whole monetary system. They have the sole right to edit and amend the centralized ledger. On the other hand, in a distributed ledger scheme, multiple vetted institutions, probably commercial banks, are allowed to edit the ledger. This system allows for redundancy and distributed data among nodes, providing with an added layer of security. All network participants have to agree to the validity of each record, rendering any falsification attempt more than likely fruitless.

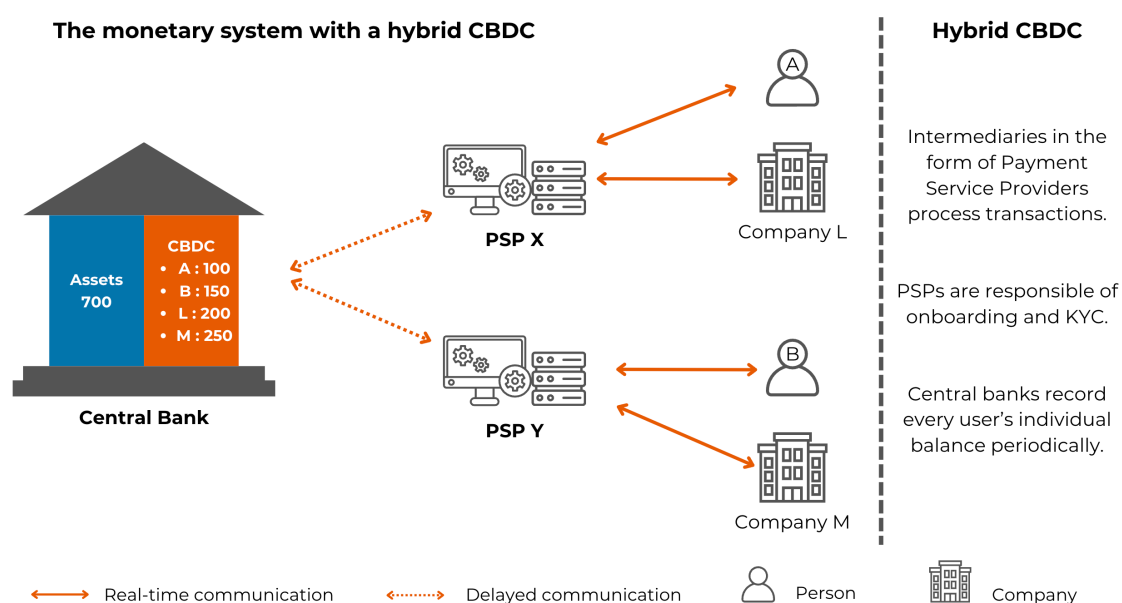
Another key consideration is access to information, which opposes two approaches. A permissioned distributed ledger technology prohibits public consultation of the ledger as only node administrators have access. The bulk of benefits resides in a lower cost and faster implementation process. It contrasts with a permissionless model in which all actors disclose and can consult transactions on a public ledger. All cryptocurrencies are built on top of the permissionless approach but there is a high likelihood that central banks will reserve access to trusted, licensed and regulated institutions, if any other than the central bank itself (Lanquist et al., 2021).

There are three different architectures of retail CBDCs currently under study for implementation. The first one is a direct, single-tier CBDC and as the name implies, consumers and businesses have a direct relationship with the central bank. The system totally bypasses commercial banks as the central bank is in charge of handling all payments and keeping track of all balances. The large shift in operations detracts from the current central bank core missions and relatively lean approach. These institutions would have to expand their skillset to tackle new issues related to user-facing duties. One key question concerns data due to the sheer amount central banks will have to deal with and the associated governance principles (BIS, 2021). Moving from the around 10,000 accounts the European Central Bank manages today to between 300 and 500 million depending on estimates comes with a set of challenges (Bindseil, 2020).



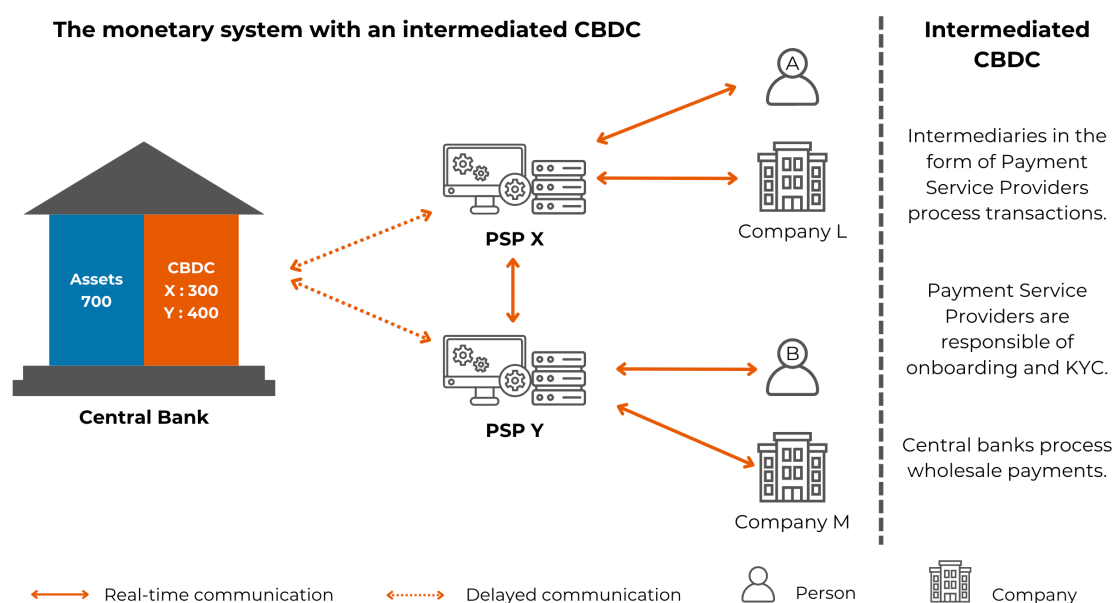
Graph 3: The monetary system with a direct retail CBDC (Source: Author & BIS, 2021)

The second architecture is based on two-tier systems separated into two variants. In the hybrid CBDC model, the central bank still keeps track of all balances, although it does not process transactions anymore. Client-facing duties are entrusted to Payment Service Providers, tasked with handling onboarding, Know Your Customer procedures and periodically providing the central bank with a record of all individual balances. This model appears promising as it tones down the industry upheaval, enabling room for partnership between public and private institutions more similar to the current system. Furthermore, it alleviates the most cumbersome duties detracting from the central bank's current lean approach.



Graph 4: The monetary system in a two-tier a hybrid retail CBDC (Source: Author & BIS, 2021)

The second variant of a two-tier architecture is an intermediated CBDC that represents an incremental step-up in delegation from the hybrid model. In this system, central banks only record the aggregated balance of Payment Service Providers and fulfill the same mission set it does today. PSPs on the other hand execute all transactions and act as commercial banks have done heretofore. If a retail CBDC is preferred to a wholesale option, this architecture is the closest match to current operations (BIS, 2021).



Graph 5: The monetary system in a two-tier and intermediated retail CBDC (Source: Author & BIS, 2021)

In essence, while major countries' CBDCs are still at best in the early trial stages (Atlantic Council, 2023), projects are well anchored as the way forward for central banks around the world. With a retail CBDC roll-out, the objective of promoting financial inclusion would certainly be met with success as banks would no longer be capable of denying access to any citizens in possession of their government digital identification. In addition, central banks would gain more precise control over the economy. Instead of toying with interest and discount rate, reserve requirements and open market operations to control the amount of money in circulation, they would be directly coding the variables. This game-changing novelty offers central bankers the unique opportunity to regain the vast amount of control they have lost over money supply, notably to the shadow banking system (European Central Bank, 2021). To this day, the efficacy of policies aimed at changing money supply is being undermined by commercial institutions issuing more money than there is cash. Hence the central banks' efforts to cope with such complexities through strategies aimed at increasing monetary policies

effectiveness (Brock & Hall, 2024 & Bromberg 2023). Relying on a CBDC however would enable all digital transactions to fall back into the central banks' sphere of control thanks to the revolutionary programmable money. This ground-breaking innovation means economic guidelines would have a precise impact and regulators would finally be able to fine-tune parameters (Schumacher, 2024).

Ultimately, not all questions have been settled as key financial institutions and banks depend on the upcoming central banks' choices to determine their future relevance. A direct and single-tier model is guaranteed to short-circuit banks altogether while a two-tier architecture leaves room for private actors. Moreover, the prospect of no credit or liquidity risk on bank customers, expanded banking access and lowered international payment costs among a myriad of other benefits certainly provides hopes of a more inclusive and egalitarian financial sector for all.

- What if digital banks were only a gateway to CBDCs?

“Never waste a good crisis” - Wolstenholme, 2009.

The adage summarizes how times of crisis and the rise of new generations have formed the perfect nurturing ground for pivotal times in human history. In some instances, the resulting nudges are ever-so-subtle and can play out over a long-term horizon, driving changes in behavior.

Digital banks have been instrumental in changing the public's expectations and relationship with financial institutions. While older generations are struggling to hop on the bandwagon, younger folks are accustomed to the new era of banking (Zhu et al., 2024), cemented as the new norm. The added benefits of digital institutions have proven effective in driving change in banking behavior and adoption. However, this societal transformation is setting the stage for the next one.

The rise of internet banking contributed to the popularity of cryptocurrencies, born in response to the devastating 2008 Great Financial Crisis that struck companies and households. Central banks are seeing their control over money eroding by the day as private entities are evading control thanks to proprietary payment systems and credit issuance while cash is falling in disuse. And for good reasons, they cannot let this power slide out of their hands (Di Iorio et al.,

2024). Under the guise of laudable intentions such as financial inclusion, fight against poverty and ensuring the system's stability, central bankers are starting to frame the future of money (European Central Bank, 2022a).

The unexpected crisis no central bank wasted was the 2020 outbreak of Covid-19. Billions of people forced to stay home and shut down businesses had to adapt and further adopt the digital transition. The pandemic has enabled a light-speed shift in habits and propelled digital banking adoption to new and never before anticipated heights. As of 2021, 76% of adults globally have an account in a financial institution (World Bank Group, 2022). The general populace is increasingly getting used to digitalized banking, constituting a perfect unhopd-for natural nudge.

With digital banking becoming the norm and private institutions taking care of the heavy lifting of getting people accustomed to this new era, central banks stand to benefit massively. The implementation of CBDCs appears as the obvious next step, the natural evolution from a clunky 20th century system unable to fully meet 21st century requirements. Willingly or not, digital financial institutions have given central banks with the utmost perfect nudge to roll-out their proprietary solution, offering a clean-slate system that could reshape the global financial system. The favored models provide added security, alleviate the risk of a third-party defaulting and appear to solve most problems crippling the current retail banking industry.

- The dystopian future of banking

“Never waste a good crisis” - Wolstenholme, 2009.

There is a second meaning to this sentence, one more ominous and sinister. When a crisis arises, governments promptly declare the state of emergency. This process enables light-speed fast reactions by competent authorities, implementing laws that could never exist under normal circumstances. In the case of the 2020 pandemic, the strict lockdowns have undoubtedly saved lives and gave elected officials some leeway, the luxury of having time to sit down and carefully assess the situation.

But this special procedure is a double-edged sword. During times of emergency, freedoms are curtailed, the press is often muzzled and given clear indications regarding the information to

propagate. These practices have the potential to cost lives, and a prime example resides in the time lost by authorities globally due to Chinese efforts to suppress media coverage of the pandemic's early stages. However, the most threatening part resides in how government officials are able to seize unforeseen levels of power, bypass the due process of law and restrict freedoms. The 'Stomp Reflex' characterizes how in times of crises, when both dangers and opportunities arise, two sides of the same coin, some politicians intend on making the most out of the latter to reach for more power (Kemp, 2021). By playing on the fears of the general populace, officials hijack the decision process and impose emergency legislation, sometimes as drastic as imposing a martial law (Head, 2017).

The Covid-19 pandemic is a prime example of restricting freedom and agency, press muffling and downright global martial law, but it is far from the only one. The infamous "Freedom Convoy", a large group of Canadian truck drivers protesting the draconian and life-altering pandemic related measures experienced a crackdown unprecedented in Western democracies (Gillies et al., 2023). While protesting for their livelihoods to be restored, the deaf political class in power invoked never-before-used emergency powers and restored public order. Protesters' bank accounts were frozen, the public's donations forbidden, and the bothersome trucks towed away. Two years later, this extraordinary display of power was ruled unlawful and a violation of the individual's rights, but it was too late, the damage had already been done (Tuccille, 2024).

During these recent events, panicking politicians from western democracies were able to bypass the due process of law to the point of flouting basic freedoms, freezing bank accounts on a simple request to banks. Considering these unsuspected measures, one can only wonder at the marvels of unlawful behavior they could achieve with their brand-new and soon-to-be-implemented tool. This revolutionary instrument, the magic wand for obedience, and the apparatus aimed at cementing social control as the fourth core function to money is none other than the very Central Bank Digital Currencies most countries are pushing forward.

"History does not repeat itself, but It often rhymes"
 – Mark Twain

With the flick of a switch, if an emergency declares itself, people in power will enjoy the freedom of depriving others'. This tool at the pinnacle of technology becomes all the more powerful if tied to a digital identification scheme in which each citizen's card is dematerialized and just as easily modified, bearing altered rights, or all together revokable. Disposing of such

a powerful grasp on money, the livelihoods of everyone, including opposing figures and dissidents, truly represents the culmination of a Machiavellian plan to definitively seize power or alter society (Schumacher, 2024).

Not all CBDC's extraordinary and novel features can be used against its users, though. In the case of a new disease outbreak, governments can restrict spending to a certain geographical area, hindering mobility to prevent contagion and save lives. In order to meet the ambitious climate change targets, people in power will also have the ability to assign every individual a carbon quota, improving consumer awareness and rationing access to the most polluting items of consumption. Surveillance agencies could also do a better job at preventing illicit activities by monitoring money flows and preventing terrorism just as well as organized crime (European Central Bank, 2024a & Di Iorio et al., 2024). The system could also be linked to a revolutionary social credit score scheme promoting positive behavior, encouraging citizens to engage in activities that benefit the greater good and preventing the ones that infringe the law (Hou et al, 2022). Finally, in times of economic hardship, central banks could tweak some metrics and reduce money's lifespan, attribute a set shelf-life or even impose a highly negative interest to stimulate consumption and resume growth (Schumacher, 2024) ...

“Permit me to issue and control the money of a nation, and I care not who makes its laws” - Mayer Amschel Rothschild

But is it desirable to entrust governments and central banks with more power than they already have? While most central banks are in theory independent from the government, bankers maintain close relationships with elected officials. If history has proven that a government can unlawfully hijack power and order freezing hundreds of bank accounts, it seems reasonable to doubt that this theoretical separation of powers would last long. Placing such a powerful tool in the hands of people capable of eluding any form of accountability would probably unleash mayhem and wreak havoc in an irreversible blow to the already eroding individual freedoms we have come to cherish.

As CBDCs are framed as the only logical successor to our current financial system, the delicate balance between convenience and control grows ever more precarious. What might appear as a pathway to progress and inclusion could also serve as the gateway to unprecedented and irreversible surveillance and manipulation. The future of money is shrouded in both promise and peril and as we stand on the brink of this new era, one must question:

You will own nothing, merely being granted access to your hard-earned money, renting your livelihood at the perpetual mercy of another power sleight of hand.

You will be happy, though.

But will you?

- Part summary

For centuries, money has served the three core functions of a unit of account, a store of value, and a medium of exchange. Central banks, however, are contemplating the introduction of money as a means of social control as a fourth. Do these noble motives aimed at promoting financial stability and inclusion hide a darker agenda at play (Cunningham, 2019)?

Most contemporary money is fiat currency, backed by trust in issuing institutions rather than physical assets (Chen, 2023). In response to the rise of cryptocurrencies, central banks aim to introduce proprietary digital currencies, seeking to combine the benefits of cryptocurrencies while maintaining control over money issuance (BIS, 2021). Unlike cryptocurrencies, CBDCs are pegged to their fiat counterparts, ensuring stability and trust (Seth, 2023).

The monetary revolution is already well underway, with over 130 countries researching or piloting such currencies (Atlantic Council, 2023). The first main type of CBDC is intended for wholesale applications, facilitating low-cost and fast clearing of transactions for financial institutions. Retail CBDCs, on the other hand, are designed for use by the general population and can be token-based, resembling cash with anonymous transactions, or account-based, requiring digital identification and offering greater regulatory oversight (Seth, 2023 & BIS, 2021). Three architectures are under study, with a hybrid model involving Payment Service Providers managing client-facing duties likely to be preferred (BIS, 2021).

Digital banks have played a crucial role in acclimating the public to digital banking, setting the stage for CBDCs. The Covid-19 pandemic accelerated this transition, and this societal shift has provided central banks with the perfect opportunity to introduce CBDCs as a natural evolution of the financial system (World Bank Group, 2022).

However, the potential for abuse is immense. Many governments capitalize on times of crises to seize unprecedented powers, bypassing due process, illegally restricting and curtailing freedoms (Kemp, 2021). Entrusting select individuals capable of eluding accountability with virtually unlimited power over money could result in a tool for unprecedented surveillance and manipulation (Schumacher, 2024). The future of money holds both promise and peril, but is the general public willing to forego unconditional access to their livelihoods, perpetually renting money and standing at the mercy of another sleight of hand?

Part 4: Tyranny safeguards

There is a high likelihood that all attempts at preventing CBDCs from seeing the light of day will turn out unsuccessful. If there truly are nefarious intents behind their implementation, the winning strategy may not be to block them altogether as it could shift the evil forces onto another project. Instead, by deviating and changing the course of the current efforts, central banks could be led into developing a toned-down version, confined to a specific use-case, offering the possibility of reaching a compromise. The prospect of the advantages of a new technology to build on top of and improve the current financial system while halting all attempts at depriving people of individual freedoms certainly provides hope of a bright future.

At this stage, few central banks have rolled out digital currencies, and even fewer have gotten any traction or widespread adoption. The Bahamas's Sand Dollar debuted in October 2020 and was the world's first central bank digital currency. Despite ongoing efforts, the currency has been met with a lackluster adoption rate of 7.9% as of mid 2022 (Wright et al., 2022). Introduced one year later, Nigeria's own attempt with the e-Naira also faced an astounding absence of interest from the general public. The response of government officials resulted in a series of nudges to promote the currency and incentivize people to transition to a cashless society by setting caps on withdrawals (Ndeche, 2022).

While very few projects have been introduced yet, more than 130 countries accounting for 98% of the world's GDP are involved in the development of a CBDC. All hope, however, is not lost. Preventing this dystopian future of banking from turning into reality will require citizens and people in power to become aware of the dangers of CBDCs and take appropriate measures.

- What model is worth adopting?

The oldest form of payment still in use today very well might turn out to be the best solution yet. While many have been yearning for a cashless society for ages (Schumacher, 2024), the pushback has been immense as many consider the tangible asset to be the last line of defense against monetary absolutism. Despite representing an easier target for theft and the cumbersome nature of carrying bulky coins and notes at times, cash still has many advantages to offer. It constitutes the only legal tender and gives citizens a direct claim against the central bank. Given its physical properties, it is impossible to hack, and counterfeiting has grown ever more difficult

as security measures advance (European Central Bank, 2024a). Most importantly, it constitutes a wall of privacy for users as it is laborious to track. Much to the dismay of control freaks, citizens are free to transact as they please and, in some instances, cash enables people to hold other countries' currencies, offering citizens a shield against absurd inflation rates. While its detractors insist on its ability to fuel black markets and illicit activities, the truth is that digital payments also fail to tackle these issues and worse yet, enable criminals to move enormous sums of money at a speed rarely seen before. Cash therefore presents itself as a solid form of payment and provides citizens with adequate privacy, freedoms, and most importantly, security in the form of a central bank backing.

That being said, today's world cannot function solely relying on cash as digital payments have been instrumental in shaping the economy and society. Banking digitalization has been at the center of all discussions, enabling the banking sector to durably shift the business model to accommodate 21st century needs and preoccupations. The result of this digitalization are companies, digital banks and neo financial institutions alike, that open up a new field of possibilities and dust off clunky old services. Users are able to open accounts in minutes, transfer funds and transact with the world as they please with tailor made solutions truly fulfilling their needs. Most importantly, clients are being met with a solution empowering their finances and while privacy has proven to be at risk at times, a great design still enables users to enjoy most of this fleeting privilege. Digital banks and their legacy counterparts still bear relevance in today's day and age by providing convenient solution that do not compromise privacy and integrity to an intolerable extent.

"Arguing that you don't care about privacy because you have nothing to hide is like arguing that you don't care about free speech because you have nothing to say"
– Edward Snowden

The model however has not been exempt of problems, namely the difficulty for banks to transact internationally as cross-border clearing still proves time consuming and tricky. Wholesale CBDCs offer a compelling solution to these challenges as they would allow faster and swifter inter-bank transactions. In practical terms, for the average citizen, the adoption of such a model would probably not have much of an impact. This solution is aimed at solving problems encountered by banks that need international transactions and would greatly benefit from an update to the complicated systems in place today (Cœuré et al., 2018).

Additionally, the introduction of payment conditionality could offer prospects of safer and faster transactions. The argument for a Central Bank Digital Currency enclosed in a confined banking ecosystem with the guarantee of no spill-over into the real economy offers a safe outlook. Though the main danger resides in the foot-in-the-door effect. As central bankers report on the marvels of this newly rolled out wholesale CBDC, one can expect ambitious representatives to push for a wider spread adoption. The argument is clear, if the system provides banks and businesses with that many advantages, the population will greatly benefit from a shift to a general purpose CBDC as well ... or will it?

The risk is enormous. The potential for retail CBDC induced abuse has been discussed at length and is ominous. While presented as a worthy substitute to cash, general purpose digital currencies are not anything like it. These new-generation currencies in and of themselves might not be evil, but they represent a massive Trojan horse able to hijack society. Even in the case of a perfectly good-intentioned implementation, these currencies represent a massive threat to democracy and economic stability. Centralizing money to such an extent opens the door for catastrophic consequences in the case of a system hack by eliminating resilience, compartmentalization and anti-fragility (Zhang, 2024). Exposing countries to such dangers for the meager prospect of further promoting financial inclusion and alleviated intermediary risk is ludicrous in addition to being the wrong solution to valid problems and concerns. For these reasons, and given the existential threat to democracies and stability, retail oriented central bank digital currencies are to be fervently opposed in every possible way.

“At the moment, the digital euro is a solution looking for a problem to solve” - Markus Ferber

In addition to the potential of jeopardizing individual freedoms, retail-oriented CBDCs pose an existential threat to the banking industry. In the BIS’s grand vision, all but the most lenient scheme described as an intermediated model relegate commercial banks to the role of basic payment service providers, at best. In case of the hybrid architecture, central banks shed all customer-oriented responsibilities to these now second-class banking institutions and pull the strings in the background. The more drastic changes are reserved to a direct digital currency in which the central bank is omniscient and omnipotent. This dangerous monopoly does not leave any room for the privacy some banks pride themselves on offering customers (Schumacher, 2024). It ultimately offers central banks and their representatives alike infinite power over money, opening the door for abuse in a grand sleight of hands.

- What safeguards could prevent tyrannical outcomes?

Some countries' representatives have been working on a first line of defense by proposing adequate legislation. The House of Representatives of the United States has notably passed a bill named the "CBDC Anti-Surveillance State Act" effectively banning the Federal Reserve from issuing Central Bank Digital Currencies. The bill further states that the FED does not hold the right to use a CBDC to make or shift monetary policies. Although a mostly Republican bill, this body of legislation has gained traction but has yet to pass the Senate and ultimately get approved by the President (Huang, 2024).

In presenting this bill, many have classified the issuance of a CBDC as a step towards the freedom-deprived and authoritarian regime in place in China, openly comparing a digital dollar to its Yuan counterpart. The Communist state has been decried for its massive surveillance program, intertwined with a digital identification scheme and a social credit score. In China's case, a digital currency represents the pinnacle of utmost control over citizens as cash money stood as the last part on which government officials were not able to fulfill their insatiable need for control and surveillance (Emmer, 2024). In essence, adopting legislation to prevent the issuance of digital identification linked to a social credit score in addition to anti-CBDC laws constitutes another cornerstone in protecting the general public.

Ultimately, history has proven that provided enough motivation, governments are capable of the most unethical law bending to fulfill their ambitions. The 1930s "Executive Order 6102" and "Gold Reserve Act" issued in the US by then President Franklin Roosevelt and Congress stand as prime examples. These bills respectively made it a criminal offense the own or trade gold and ordered citizens to surrender all of the precious metal to the US Treasury. In a remarkable heist, the government managed to both undermine individual freedoms and defraud American citizens by bumping the value of the confiscated gold by 69% to reach \$35 per ounce after collecting the newly declared illegal asset (Romer, 1992).

Even the very properties of gold that make it the store of value people cherish do not stand in the way of the governments' ability to bend and weaponize the legal system. And if laws are of no help in protecting the general public from ill-intentioned ambitions, the only resort is to avoid surrendering even more power in the form of a currency whose effectiveness at social control could hardly see any limit.

- Part summary

So far, only a few central banks have launched digital currencies, with minimal success. The Bahamas' Sand Dollar, introduced in October 2020, and Nigeria's e-Naira, launched a year later, both faced tepid public adoption (Wright et al., 2022; Ndeche, 2022). Despite these setbacks, over 130 countries, representing 98% of global GDP, are actively developing CBDCs. Preventing a dystopian financial future hinges on raising awareness about the potential dangers of these digital currencies and taking appropriate measures to mitigate risks.

Cash, the oldest form of payment still in use, might be the best defense against the perils of monetary absolutism. Despite its drawbacks, it remains a vital tool for privacy, security, and freedom (Schumacher, 2024). Most importantly, cash is legal tender, offering direct claims against the central bank. However, as today's world cannot function solely with cash, digital payments and banks offer fast, convenient services. While privacy risks exist, well-designed digital solutions can still provide significant protections. The real challenge lies in cross-border transactions, where wholesale CBDCs could offer faster and more efficient solutions (Cœuré et al., 2018). The underlying danger is the potential for gradual expansion into a general-purpose CBDC, which could have far-reaching implications for individual freedoms.

Retail CBDCs pose significant risks, threatening democracy and economic stability by centralizing monetary control. Even well-intentioned implementations could lead to catastrophic consequences if hacked, eliminating the resilience and compartmentalization that protect current systems (Zhang, 2024). The dangers of retail-oriented CBDCs are too great, warranting strong opposition to their adoption.

In response to these risks, some legislators are taking action, notably with the US' "CBDC Anti-Surveillance State Act" aiming to prevent the Federal Reserve from issuing such currencies (Huang, 2024). Comparisons to China's surveillance state highlight the potential dangers of CBDCs linked to digital identification and social credit scores (Emmer, 2024). Moreover, historical precedents such as the U.S. government's 1930s gold confiscation under Executive Order 6102 illustrate the lengths to which governments might go to exert control (Romer, 1992). As the prospect of owning nothing and merely being granted access to money looms, society must critically evaluate ceding more power to digital currencies that could be weaponized for social control.

Conclusion

This thesis has delved into the complex and evolving landscape of the banking sector, focusing on the transformative effects of digital banking and the potential implications of a widespread implementation of Central Bank Digital Currencies.

- Summary of key findings

The first section established a comprehensive understanding of retail banking. These institutions play a crucial role in providing financial services to individuals and small to medium-sized businesses, offering various products such as checking accounts, savings accounts, loans, and mortgages. Although the focus is as much on the method of delivery as the products themselves.

The second part explores these changes in service delivery and products with the rise of digital banks and their potential to replace traditional retail banks. Digital institutions operate primarily online, offering user-friendly interfaces, competitive interest rates, and low fees. Despite their rapid growth and popularity, digital banks face challenges in achieving profitability, the burden of regulatory compliance, and consumer resistance to a cashless society. This transition into the digital era creates a parallel with the arc experienced by the music industry. Such transformative changes ultimately open the potential risks of a shift towards money as a service, where individuals might lose ownership of their money, merely renting access to it.

And this is precisely where central banks twist the plot in an unexpected way. The third section examines the motivations behind central banks' push for CBDCs, suggesting a potential agenda of increased control over financial transactions and money as a whole. These currencies aim to combine the benefits of digital currencies with the stability of fiat money and establish social control as the fourth core function of money. This proposed convenience, security and inclusion however comes at the massive cost of privacy. CBDCs ultimately pose a threat to society as a whole, standing as a colossal Trojan horse and opening the door to potential abuse, surveillance, and manipulation if central banks gain unchecked power over digital money.

However, all hope is not lost, and citizens stand a chance as the fourth section addresses the practical implementation of CBDCs, noting the limited success of early adopters like the

Bahamas' Sand Dollar and Nigeria's e-Naira. The dangers of retail CBDCs are ominous, undermining democracies and economic stability. Some strategies of resistance stem from the importance of preserving cash as a safeguard for privacy and freedom while acknowledging the need for digital solutions in modern economies. Although some government officials are adept at rule bending, another wall of defense stands in legislative efforts, crucial steps in preventing the centralization of monetary control in a grand slam heist.

- Future work and limitations

This thesis nevertheless opens the door to a lot more work. The critical analysis of Central Bank Digital Currencies and their potential adverse effects provides a stark introduction, but it is of critical importance to continue monitoring proposals and advancements made by central institutions. As most of countries are still at best in the development stages, new research and experimentation might lead to a drastic evolution in schemes under scrutiny.

As projects start to take shape, a next endeavor lies in scouring advancements on a case-by-case level. Each country or monetary zone's financial system, legislative environment and cultural expectations are unique, therefore requiring tailored analyses to understand the specific implications of CBDCs. Such deep-dives will provide case-specific critical analyses, a relevant assessment and a step towards avoiding democracy-altering confiscations of power.

Finally, all projects would benefit from an extensive analysis of CBDC resilience in light of cyber threats. The academic literature could build upon years of research in the cybersecurity space to provide the most up-to-date investigation.

- Closing words

The march towards Central Bank Digital Currencies has picked up a steady pace. The revolution is already well underway and anchored as the next monetary order. If CBDCs are to become the norm and widely adopted, digital banks will surely have played an immense role. Acting as a steppingstone, they will have greatly facilitated the adoption by slowly educating users and painstakingly changing customs. In essence, digital banks are more than likely going to serve as a gateway towards a broad adoption of digital currencies, an unsuspected nudge, ultimately leading to their demise.

Bibliography

In the making of this master's thesis, the author utilized ChatGPT for two purposes. The first is to condense and distill each part in order provide the most compendious part summaries. The second and last is in proof-reading by being tasked to spot mistakes and suggest modifications for the author to rectify manually.

After using ChatGPT, the author diligently reviewed and edited the content produced by the tool. The author takes full responsibility for the final content presented in this thesis and affirms the content reflects original work.

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Abstract

The banking sector has continuously evolved through the ages. Recently, the digital revolution has catalyzed rapid innovation, giving rise to digital banks. These institutions have capitalized on technological advancements, reshaping the financial landscape with user-friendly interfaces, competitive interest rates, and low fees. While digital banks seem to pave the way for a more modern financial ecosystem, they might also be unwittingly setting the stage for an even more profound societal shift.

Central banks have other plans in mind and are heavily investing in developing Central Bank Digital Currencies. These digital currencies promise the benefits of digital transactions combined with stability and security. They however also introduce a potential for unprecedented control over financial transactions, threatening privacy and individual freedoms. As central banks explore adding social control as a fourth function to money, this seemingly beneficial tool could become a colossal Trojan horse, jeopardizing the very nature of democracies.

While early CBDC projects like the Bahamas' Sand Dollar and Nigeria's e-Naira have faced modest adoption, almost all central banks are developing their projects. The preservation of cash is emphasized as a critical safeguard for privacy and freedom. Legislative efforts and citizen awareness are crucial defenses against the centralization of monetary control.

As the march towards Central Bank Digital Currencies gains momentum, the role of digital banks in this transition becomes clear. They act as a gateway, facilitating the adoption of digital currencies and ultimately leading to their own demise.

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