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The both sides. On the benefits and drawbacks of central bank digital currencies

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Abstract

Purpose: Analysing the most frequently pointed out advantages and disadvantages of central bank digital currencies. The analysis will make it possible to draw up a balance of the potential introduction of CBDCs.

Methodology: The paper surveys literature and documents of selected financial.

Findings: The balance of the benefits and drawbacks of CBDCs is not obvious. First, due to the heterogeneity of conditions in individual countries and the multitude of variants, CBDCs are far from universal. Second, the advantages of CBDCs seem to be somewhat exaggerated: many of them can be achieved using existing institutional solutions or payment technologies, while some are rather wishful thinking. Third, there are contradictions between the various advantages and uses of CBDCs. Fourth, many of the advantages of CBDCs cannot be achieved without a top-down ban on paper money, which is neither desirable nor socially justifiable.

Keywords: central banks, cryptocurrencies, digital currencies, financial inclusion, monetary policy, technology.

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Introduction

Issues concerning digital money were already studied in the late 20th century. However, it was not until a confluence of many factors (practical and theoretical) that they ceased to be of interest only to proponents of modern technology and monetary economists and became the focus of public debate. It seems that a crucial factor here was the emergence and rapid expansion of cryptocurrencies. Bitcoin—the first cryptocurrency to break through into the public consciousness—was created in 2008, and in the following years became the subject of lively discussions and imitations. It captured the imagination of academics, politicians, investors and practitioners to such an extent that digital money was mainly identified with cryptocurrencies in the public consciousness. The entities that were particularly impressed by the emergence of cryptocurrencies were central banks. It can be considered that they even felt threatened by the popularity of these instruments, as well as by voices that cryptocurrencies could become the money of the future and undermine the monopoly of monetary authorities in the area of money.

In an effort to respond to this threat, central banks have undertaken work on central bank digital currencies (CBDCs). Research and discussions on the concepts and various aspects of issuing these units have been going on since 2014, when the People's Bank of China began activities in this regard (Turrin, 2021). Since 2020, there has already been a very marked increase in the involvement of individual central banks in researching the possibility of issuing CBDCs.

Central bank digital currencies are seen as one of the most spectacular manifestations of technological advances in the financial sphere and—potentially—an element of the future monetary system. In doing so, they are considered in a variety of contexts and aspects: as a new form of money, an instrument of geopolitical empowerment, a means of increasing payment efficiency, as well as a method for preserving the effectiveness of monetary policy or, more broadly, the position of central banks in the conditions of the so-called Economy 4.0, characterised by monetary impulse transmission mechanisms and structural features of individual markets that are different from those previously identified (see, e.g., Auer et al., 2023; Barontini & Holden, 2019; Bech & Garrat, 2017; Bordo, 2022; Bordo & Levin, 2017; Carstens, 2018; Chen & Siklos, 2022; Dionysopoulos et al., 2024; Eichengreen, 2019; Infante et al., 2022; Prasad 2021, 2023).

In the context of such a large number of possible applications of CBDCs, the question arises whether this instrument really has the potential to fulfil the hopes invested in it and actually improve the functioning of the monetary sphere and the economy as a whole. For this reason, the aim of this paper is to attempt to take stock of the most frequently pointed out advantages and disadvantages of central bank digital currencies. This is all the more justified because many of them are considered

rather automatically, without any deeper reflection or attempt to understand the factual mechanisms and relationships that would be associated with the various attributes of CBDCs, including, in particular, the actual possible benefits. It is also common—treating a CBDC as a highly universal instrument—to abstract from the technical, economic and social context in different countries. In fact, this context is widely varied.

Section 1 of the paper provides a synthetic overview of the definitions, features and rationale for the post-tenant introduction of CBDCs. Next, Section 2 presents a discussion of the potential advantages of CBDCs, while Section 3 depicts the disadvantages of this instrument. The last section formulates final conclusions and assesses the conditions for the rapid spread of CBDCs.

5.1. Central bank digital currencies—definitions, origin and features

In the most general terms, it can be said that CBDCs are part of a broader group of instruments referred to as digital currencies. If such currencies are denominated in some national monetary unit and are issued by an entity (monetary authority) responsible for exchanging digital money for cash, the digital currency can then be considered to represent electronic money (e-money).

Thus, it can be stated, following a study by the IMF (2020), that CBDCs a new form of money, issued in digital form by the central bank to serve as legal tender. Without aspiring to fully discuss the concept of CBDCs,⁴¹ however, it is still worth citing the definition of Meaning et al. (2021). According to these authors, a CBDC is any electronic and fiduciary (fiat) liability of a central bank that can serve as a means of payment and a store of value. This definition is very universal and refers directly to the functions of money as they are considered in economic theory. Therefore, it is helpful in understanding the core of the central bank digital currencies and directly alludes to the possible (monetary) uses of CBDCs.

In principle, therefore, the only thing that differentiates CBDCs from “traditional” money is its form. This is because, unlike cryptocurrencies, digital currencies of central banks, as a liability of the central bank, retain the status of legal tender, being able to perform all functions of money and deriving trust and value from the monetary authority behind them.

The great popularity, or even a kind of fashion (hype) for CBDCs, is a consequence of certain specific conditions that occurred in the last two decades in the economy of individual countries, accumulating, as it were, during the COVID-19

⁴¹ For other definitions see, e.g.: (Bech & Garrat, 2017; BIS, 2018, 2020; Infante et al., 2022).

pandemic. The most common reasons for the intensification of work on CBDCs are the following:

- 1) emergence and growth in popularity of cryptocurrencies;
- 2) more difficult (due to a combination of various factors) conditions for the implementation of monetary policy;
- 3) evolution and kind of emancipation of financial institutions and the development of the fintech entities, BigTech and non-financial payment institutions;
- 4) recognition of the problem of financial exclusion;
- 5) decline in demand for paper cash;
- 6) discussions regarding the monetary sovereignty of individual countries.

These factors became apparent with changing intensity in different countries, translating into the mentioned surge of interest in digital currencies of central banks. At the same time, the varying needs of countries with different levels of development and varied quality of monetary and payment institutions resulted in the formulation of plenty of very different CBDC concepts.

Iwańczuk-Kaliska (2018) distinguishes a number of options for implementing a CBDC considering various technological, organisational and regulatory aspects. Thus, one can consider here the following issues concerning the design of a specific CBDC as: access (direct or indirect), use (or not) of blockchain technology, involvement (or not) of trusted third parties, interest rate (or not) and the degree of anonymity of holders and parties making transactions using CBDCs.

These options are at the same time (inseparable) criteria for dividing central bank digital currencies. In particular, the following antinomies can be distinguished in relation to CBDCs (see, e.g., BIS, 2018, 2020; Prasad, 2021):

- direct—the central bank delivers currency to the user vs indirect—the central bank uses banks as intermediaries;
- token-based (digital equivalents of cash) vs account-based;
- blockchain-based vs non-blockchain-based;
- interest-bearing vs non-interest-bearing (as in paper cash);
- programmable vs non-programmable;
- wholesale (for large customers) vs retail (for single entities).

A detailed discussion of the various options is beyond the scope of this study. However, it shall be noted that it should always be ensured that the specific construction solutions for CBDCs and accompanying infrastructure are consistent with the situation and needs of the country in question. This is a kind of prerequisite in order to start considering the benefits of CBDC implementation at all.

5.2. Advantages of CBDCs—potential and actual

The literature raises a number of benefits that the introduction of CBDCs would bring (see, e.g., Bordo, 2022; Carapella & Fleming, 2020; Lagarde, 2020; Lanquist & Tan, 2023; Ozili, 2023; Panetta 2022, 2023; Philippon, 2020; Rehman et al., 2023; Tan, 2023). In the following section, these benefits will be synthesised, together with a discussion of how much value CBDCs would actually add in the field. In particular, among the advantages provided by the implementation of digital currencies by central banks, the following ones are pointed out first and foremost:

- improving the payment system;
- improving tax collection and reducing the shadow economy;
- financial inclusion;
- possibility to conduct a more effective and flexible monetary policy;
- possibility of more effective fiscal and social policies;
- greater control over money issuance and cash management;
- seigniorage issues;
- monetary sovereignty.

The issues of greater efficiency of the payment system appear to be among the most fundamental ones. Indeed, it is the problems of an inefficient, outdated and ineffective payment system (for both high-value and retail payment systems) that highlight the need for new digital payment instruments. The gap between traditional forms of payment and their settlement and the opportunities offered by the increasing digitalisation of the economy is widening. Another problem here is the declining importance of paper cash, which can make it difficult for a large part of the population to make transactions and payments when, for whatever reason, they cannot use private payment instruments.⁴²

The introduction of CBDCs would be expected to bring significant benefits in this regard for individuals, businesses and institutions. These benefits would be primarily associated with a reduction in transaction costs and payment transaction time, and, with regard to international payments, also with an acceleration of settlement and an increase in its time availability (for payments between entities from different time zones).

However, several issues arise here. Firstly, the question arises as to whether, instead of introducing a CBDC, and therefore a new and untested solution, it would not be better to simply modernise and adapt existing electronic payment systems. Even if it would not be possible to modernise, but rather to build and introduce a system from scratch, this would still seem to be a safer move than an outright revolutionary change.

⁴² This issue is closely linked to the problem of financial and digital exclusion.

Secondly, there are in principle no technical obstacles to more streamlining the existing payment and settlement solutions, often very innovative at the time of their introduction, but no longer meeting the current requirements of the digital economy. This would undoubtedly translate into a reduction in payment and settlement times and the associated costs, and would not necessarily involve large expenses. In fact, the detriment here is the inertia of the stakeholders, who would have to see this as a benefit to themselves to justify the modernisation effort.

Thirdly, this the advantage of CBDCs is not universal. In countries with an efficient and secure payment system, characterised by low costs of functioning, it is difficult to see the benefits of introducing CBDCs. It is worth mentioning here that the first CBDC implementations and pilots took place in countries with a low level of payment and financial system development.

Tax issues would mainly involve the elimination of paper cash, commonly used for grey economy transactions. Digital cash would be easy to monitor, making offending activities impossible—in principle, every transaction could be easily traced. In other words, it would not be possible to use CBDCs for criminal activities or transactions outside the official circuit. In this situation, there would be an improvement in tax collection (there would be no erosion of the tax base), and the shadow economy itself would essentially be derelict (or limited to barter or, possibly, cryptocurrencies).

Again, as it seems, achieving these benefits does not require the introduction of CBDCs. A simple way would be to reduce paper cash. This process is, in fact, already taking place—the amount at which transactions must be conducted through bank accounts is getting lower and lower. This is encouraged by the numerous AML (Anti Money Laundering) regulations. Furthermore, the desire to achieve real benefits in terms of reducing the shadow economy would require the adoption of an option in which CBDCs completely replace paper cash, rather than being complementary to it. This, in turn, appears (for the time being) to be difficult to implement for a number of reasons.

In countries with underdeveloped financial systems, CBDCs can undoubtedly be an “inclusive” factor, facilitating access to basic financial services for those who, for various reasons, are deprived of them. If, at the same time, access to smartphones is widespread in such countries (which is generally the case), the provision of CBDCs becomes a factor that can significantly improve people’s access to basic financial services. Thus, the level of financial exclusion in the country may be reduced.

The second advantage to be pointed out in terms of the impact of CBDCs on reducing financial exclusion is that it would constitute a state-owned, universally accepted legal tender that would be at the disposal of citizens. Indeed, a decline in the widespread use of paper cash may be linked to the limited access of a significant part of the population to money issued by the central bank. A part of the public is then, as it were, “condemned” to private payment instruments, the use of which

may, for various reasons, be difficult or under unfavourable conditions, or which are simply not trusted. CBDCs, by replacing paper cash, offset this problem.

A similar issue would be the possibility of using the central bank digital currency in transactions using modern e-commerce channels, especially in the context of the development of the so-called Internet of Things. In a model where purchases of goods or services and related payments would be made directly by household appliances (e.g., a fridge or a printer) using funds provided by their owner, there could be a risk of manufacturers of such appliances (in cooperation with payment service providers) introducing specific payment solutions, access to which would be limited. It is also quite easy to envisage the monopolisation of this type of activity by a single provider of specific payment services and instruments. In such a case—again—the CBDC would be the instrument to nullify such discriminatory practices.

While not denying the advantages of CBDCs in reducing financial exclusion, several issues must be pointed out. Firstly, in order for these advantages to manifest themselves, the absence of digital exclusion is necessary, which can be somewhat of a problem in itself. Secondly, financial exclusion may have causes other than just the development of the financial system or the cost of financial services. Trust in banking institutions (including the central bank), the level of financial literacy or the desire for privacy are also important aspects here. Hence, reducing the scale of “unbanking”, in addition to the mere introduction of CBDCs, requires extensive information and education activities.

The literature emphasises that one of the major advantages of running CBDCs would be the increased ability of central banks to implement monetary policy (e.g., Bordo & Levin, 2017). This is especially true if CBDCs are interest-bearing. Firstly, the central bank could—by changing the interest rate on CBDCs—directly and immediately influence the interest rate on the funds of those holding CBDCs and thus their propensity to save and/or invest. In addition, changes in the interest rate of CBDCs would naturally affect the interest rate of bank deposits, for which CBDCs would be in direct competition. Therefore, the effectiveness of the mechanism for transmitting central bank interest rates to the economy would increase.

Secondly, the introduction of CBDCs would allow central banks to reduce or even eliminate the problem arising from the (effective) lower bound on nominal interest rates. Namely, central banks are not in a position to lower interest rates explicitly below zero. Depositors can always do this, as they can convert their deposits into (paper) cash, the interest rate of which is zero—and therefore more favourable than in the case of deposits.

Thirdly, a direct potential implementation of QE (Quantitative Easing) programmes would be possible by purchasing securities for CBDCs without the involvement of banks. In addition to eliminating intermediaries, this would also significantly increase the number of entities that could easily be party to such transactions.

Fourthly, the potential expiry date of CBDCs could provide an additional instrument to stimulate aggregate demand in a recessionary environment. A shorter “shelf life” of CBDCs would arguably increase the propensity to spend, giving a boost to the economy.⁴³

However, the advantages are not obvious. First of all, the interest rate of CBDCs raises many questions as a factor that violates the conditions of market competition. The same applies to the expiry date of CBDCs as a factor that undermines confidence in digital cash and deprives it of an indispensable feature that all money should have—the certainty of future value. Further, eliminating the problem of a floor for nominal interest rates would require the complete disappearance of paper cash, which in practice would probably require a legal ban on its use. Indeed, without such a move, it would still be possible to convert negative interest-bearing deposits or CBDCs into paper cash. It is also debatable to what extent the introduction of CBDCs would add value to the current arrangements. After all, it is stressed that the current monetary policy transmission mechanism is effective and that changes in central bank interest rates are fairly quickly transmitted to deposit and lending rates in the banking sector.

Regardless of the potential monetary policy options, having the citizens of a country hold accounts through which they could have access to CBDCs would give the authorities a very convenient option to conduct fiscal (but also social) policy. It would then be possible to make rapid transfers of budgetary resources to specific social groups (or even individuals), in accordance with the fiscal policy mode adopted. This type of opportunity for “dedicated”, punctual provision of funds to specific groups of citizens, or society as a whole, would undoubtedly increase the effectiveness of fiscal instruments—especially those of an expansionary nature.

Another issue would be the possibility of implementing social policy by directing it straight to those in need. In addition, a CBDC, combined with a system for confirming the digital identity of clients, could ensure the efficient distribution of public assistance funds in situations of higher necessity (pandemic, natural disasters). Problems in this area became clearly evident during the COVID-19 pandemic.

However, the above potential advantages of a central bank digital currency require the assumption that every citizen will have a CBDC account. Indeed, fiscal policy should not act selectively only on those who are part of a CBDC, but should extend to all those eligible for a given benefit / assistance. It is also important to bear in mind that recipients of social transfers are relatively often digitally excluded.

An advantage that does not have a purely economic dimension is the introduction of CBDCs as instruments for maintaining (or strengthening) monetary sovereignty. This would be particularly important if a CBDC was introduced as a form of money by a country with a strong currency that was widely used in international exchange. Such a CBDC could pose serious competition to the currencies of other countries,

⁴³ However, this type of solution is highly controversial and difficult to imagine in democracies.

especially those with a weaker monetary system and lower credibility. Over time, such a currency could also be used as a means of payment in domestic payment transactions, which would be risky for the stability and security of the functioning of national payment systems. In other words, a CBDC of a strong country would accelerate the process of the so-called “dollarisation” of a country with a weaker currency.

Economic considerations are therefore overlapped (and sometimes even dominated) by geopolitical issues related to the game of domination and currency wars. A related issue is maintaining control over the national currency and its use in the face of the potential increase in the importance of private digital currencies, including the possibility of their issuance by corporations (including BigTech).

While recognising the validity of these arguments, it should be noted that there is a risk of a specific herd instinct, resulting in the adoption of a CBDC even by countries for which it would not constitute a significant qualitative leap. As with the other advantages of CBDCs presented here, there is no universality here either. History is full of examples of monetary reforms and moves intended to increase the power of a given country, the effect of which was exactly the opposite, such as clinging to the relics of the gold currency system in the interwar period.

A more down-to-earth argument is to ensure greater control over the issue of money through the issuance of a CBDC by the central bank and the issue of seigniorage connected with it. Providing paper cash involves high costs and numerous logistic difficulties. This applies both to developing countries (struggling with a lack of paper cash in the face of factors such as rapid economic growth, an often large geographical area for the supply of banknotes and coins, and a weak network of financial institutions), and to developed countries, where the mass of paper cash in circulation is significantly greater. In both cases, the time and costs of production, distribution, verification of the authenticity of banknotes and the efficient exchange of used banknotes constitute a significant challenge for the monetary authorities. A CBDC, which generates essentially no further costs after the initial outlay, is a natural improvement here. According to the IMF (2020), the transition to digital currencies could reduce the costs of issuing and handling paper cash by up to 0.5% to 1.0% of GDP. Moreover, if it was possible to create demand for digital cash, it could offset the decline in demand for paper cash, and thus balance or even rebuild the revenues of central banks from seigniorage.

5.3. Flaws and problems connected with CBDCs

The disadvantages of central bank digital currencies are related to their incorrect design, inadequacy to the conditions of a specific country or the adverse economic and social consequences of their use. In this context, the following are disadvantages

mentioned primarily (Carapella & Fleming, 2020; Chapman et al., 2023; ECB, 2020; Garrat et al., 2021; Hoang et al., 2023; Prasad, 2021; Turin, 2021):

- disruption of banks' business models;
- risk of reputation decline and loss of credibility;
- risk of rapid outflow of money, which may have a crisis-generating effect;
- problem with ensuring financial (also exchange rate) stability;
- issues of inappropriate technological solutions;
- lack of anonymity, privacy and wide possibilities of state control provided by the use of CBDCs.

Among the potential problems related to the introduction of CBDCs, it is worth paying attention to the consequences it would have for other banks. Undoubtedly, this impact will vary depending on the CBDC model adopted. The greatest doubts would arise from the direct CBDC, an option eliminating banking institutions, as well as the issue of the interest rate on the central bank digital currency.

Considering the first issue, it is worth noting that if the CBDC system were introduced, the possibility of convenient and cost-free use of it and storing any amount of digital money in a completely safe account in the central bank would constitute difficult competition for other banks. One could then expect an outflow of bank deposits in favour of CBDC accounts, as the former would become relatively less attractive.

Going even further, with a direct, interest-bearing CBDC model, the entire financial system could move towards the so-called monobank.⁴⁴ If banks were unable to replenish the deposits that flowed into CBDC accounts through market transactions, they would ultimately have to refinance themselves with the central bank. The security for the refinancing loan would be assets held by banks—mainly loans to the private non-financial sector. As a result, the credit risk would be transferred to the central bank, which would thus be forced to intervene in the lending process. Therefore, it would start to enter another area, reserved so far for banks. Moreover, the central bank could constantly strengthen its position and role in the area of payments and settlements. As a result, there would be fewer and fewer areas in which other banks would not encounter (non-market) competition from the central bank.

However, it is difficult to imagine that the monobank structure would be effective in the conditions of a market economy. There would be an obvious conflict of different roles and goals of central banks, leading, among other things, to the disappearance of potential benefits from the introduction of CBDCs. Undoubtedly, this would also lead to an overload of central banks, which are already struggling with various tasks. A CBDC, a new instrument at the discretion of the monetary authorities, would therefore, somewhat paradoxically, bring new obligations and threats to central banks.

⁴⁴ Such a system was typical—of course without digital currencies—for centrally planned, socialist economies of Central and Eastern Europe before 1989.

The described problem is directly related to the issue of potential difficulties in ensuring financial stability, and thus—creating conditions that minimise the risk of a financial crisis (banking or currency crisis). Namely, the central bank could, as a result of the described mechanism of converting bank deposits into CBDCs, destabilise the financial system.

Given that central bank money is the safest form of money available, CBDCs would be particularly attractive to risk-averse users looking for reliable, safe investments. In a situation of uncertainty and stress in financial markets, they could easily exchange their savings in banks for a CBDC in the central bank. The latter would constitute a kind of “safe haven”, making it easier for bank customers to guarantee the safety of their funds—especially those exceeding the amount of payment guaranteed by safety net institutions.

It is understandable that this type of activities would be most intensified in periods of threats (actual or anticipated) for the banking sector, i.e. when stability and the lack of unexpected withdrawals from banks would be most desirable. CBDCs may therefore increase the likelihood (and scale) of a bank run. In such a situation, the traditional safety net may not be enough to stop the massive outflow of bank deposits to CBDCs. In the belief of banking customers, CBDCs will simply always be a better option in situations of threats to financial stability and potential outburst of financial crisis.

Paradoxically then, the greater the success and popularity of CBDCs would be, the stronger the mechanism of potential search for a CBDC “safe haven”, and, consequently, the greater the destabilisation.

Another problem is the process of transitioning to digital currencies. Such a radical reconstruction of the monetary system requires credibility of state institutions (mainly the central bank), transparency of the entire process, selection of technical and organisational solutions that are most appropriate for a given country, and, finally, appropriate information policy on the part of the state authorities. It is also necessary to think through a whole range of general solutions, as well as many operational details, each of which may determine the success of the entire project.

Any change in the monetary system has always aroused controversy, uncertainty or even fear on the part of those who have the most to lose in such a situation, i.e. the owners of money. When it turned out that the reform was poorly designed, introduced too suddenly and without adequate preparation, it resulted in significant social tensions and economic perturbations.

The transition from paper cash to digital cash, based on, as is generally postulated, technologies (often associated with unstable cryptocurrencies) that are quite difficult to understand for an average recipient would be an extremely difficult operation. Therefore, a potential failure (or even temporary problems) in the introduction of a CBDC may completely destabilise the monetary sphere of a given country. This is not even about the failure of digital cash itself, but about the general loss of credibility by monetary authorities and, consequently, a retreat from a given currency.

The risk of such a scenario is even greater because central banks, when considering CBDC implementation options, are often overly inspired by cryptocurrencies. They try to copy the technical solutions used in them (primarily in bitcoin), even though in many situations they do not correspond to the specific functioning of central banks. In this regard, it might be argued that the excessive complexity of technical issues of CBDCs following from imitation of solutions used by cryptocurrencies (mainly blockchain) is pointless. First, blockchain does not help to prevent the above-mentioned drawbacks of CBDCs. Second, the application of blockchain to CBDCs makes it difficult to take advantage of the benefits of digital cash (see Cellary & Marszałek, 2024).

Finally, a particularly controversial and widely discussed problem associated with CBDCs is basically the complete lack of anonymity and privacy, as well as the comprehensive possibilities of state control. It seems that these issues are most often perceived as a disadvantage of CBDCs. In general discussion, especially among laypeople, CBDCs are perceived as an instrument that somehow “closes” the system of supervision over citizens. It allows, in the opinion of CBDC opponents, to monitor each transaction and force people to spend money (through the possible expiry date of the CBDC).⁴⁵

Undoubtedly, the degree of anonymity and privacy of a CBDC would be non-existent. On the other hand, the currently existing cashless payment solutions do not allow for concealing transactions. Additionally, systemic issues are important here—one could optimistically assume that in a democratic country, government agencies will not abuse the possibility of surveilling citizens. Hence, the accusations against CBDCs can be considered, according to Prasad (2023), somewhat exaggerated.

However, the problem here may be the growing influence on the choices, decisions and attitudes of users (especially younger generations) of electronic media, social media and new, typical of the so-called digital dispersion era, forms of interpersonal interaction. While it is difficult to imagine easy consent to giving up paper cash and limiting civil liberties on the part of elders, younger generations—who naturally function in the digital world (which was additionally reinforced by the lockdowns during the COVID-19 pandemic), might no longer perceive this as a problem.

Conclusions

The balance of CBDCs does not seem to be obvious, despite the seemingly clear-cut advantages that the implementation of this instrument can bring. First and foremost, it is worth noting that due to the heterogeneity of conditions in individual countries,

⁴⁵ Indeed, e.g., Sveriges Riskbank (2018, 2021) admits that all e-mail transactions would be traceable.

as well as the multitude of CBDC variants (depending on the selection and design of specific features), this solution is definitely not universal.

Furthermore, as the considerations in this paper show, the advantages of CBDCs seem to be somewhat exaggerated—many of them can be achieved using existing institutional solutions or payment technologies. Some, on the other hand, are rather quite wishful thinking. Still other features and consequences of CBDCs are beneficial from the point of view of policymakers, but not necessarily from the point of view of citizens themselves.

A rather fundamental problem should also be highlighted here; namely, there are contradictions between the various advantages and uses of CBDCs. For example, it is not possible for CBDCs to be an effective means of payment, improving the efficiency of settlements and serving smooth economic circulation, and an instrument of monetary policy at the same time. Similarly, it is not possible to use CBDCs as instruments to combat financial exclusion, which citizens could trust, simultaneously using CBDCs with an expiry date, serving to stimulate the economy or achieve other state objectives. In addition, many of the advantages of CBDCs cannot be achieved without a top-down ban on paper cash, which is neither expedient nor socially justifiable.

To conclude, following the metaphor of a professional boxing fight in which the championship belt is at stake, in order to defeat the champion, the challenger must win in a very convincing way, preferably by knockout. Transferring this to the monetary system, changing the existing solution, which is after all the result of a kind of evolution and numerous past experiences (including lessons from important previous arrangements) for another construction would only be justified and sensible if the new solution was clearly better. In the case of CBDCs, there seems to be no such clear advantage.

Nevertheless, this does not mean, of course, that the introduction of CBDCs will not take place for image reasons (the desire to create an image of the country in question as modern and financially active) or purely political reasons. However, such action and motivations would be fraught with enormous risks.

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