

Central Bank Digital Currency: Facilitating its understanding from a comparative global perspective

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Abstract

The aim of this paper is first to elucidate the concept of monetary sovereignty to establish its pivotal significance to the thematic framework of Central Bank Digital Currencies (CBDC). Building upon this analysis, three global players, each with their own distinct approaches and implementations of digital currency, have been selected for a contrastive analysis: The People's Republic of China with its e-CNY, the United States' push and pull over a Digital Dollar and, lastly, the ambitions of a Digital Euro in the European Monetary Union (EMU).

Keywords: Central Bank Digital Currency, CBDC, monetary sovereignty, digital banknotes, digital currency, digital euro, digital dollar, e-CNY

A. Introduction

Recent years saw a rapid growth in projects aiming at the creation of a Central Bank Digital Currency (CBDC). A CBDC is commonly defined as a digital payment instrument, denominated in the national unit of account, that is a direct liability of

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the central bank.¹ It constitutes a form of central bank money (CBM). If a CBDC can be used by the general public as an equivalent to cash, it is referred to as “retail CBDC”; if it can only be used between certain actors (e.g., banks), it is referred to as “wholesale CBDC”.² A retail CBDC, in essence, is central bank cash³ available in digital form (digital banknotes), acting as an additional payment method.⁴ Being a form of CBM, a CBDC is to be distinguished from private digital currencies (e.g., *Bitcoin, Ethereum*).⁵

As of February 2025, 134 countries and currency unions are exploring a CBDC—a development which is also framed as a “race for the future of money”.⁶ Much like the AI Act,⁷ heralded as “the first of its kind in the world”,⁸ the European Union (EU), with its ambitions to establish a Digital Euro (DE), once again appears to be entering a global regulatory competition. This time, the focus is on how money—or, more precisely, CBM—should look like in a world marked by the growing importance of digitalization. With the publication of the Report on a DE⁹ by the European Central Bank (ECB) in October 2020, and, more recently, the European Commission’s proposal for a “Regulation on the establishment of the digital euro”¹⁰ (DER proposal) presented in June 2023, the EU has stepped into the regulatory race. The DE raises a variety of questions and can be viewed from different perspectives. This paper will shed some light on the DE from a comparative global perspective for a better understanding of the EMU’s attempt to create its own CBDC.

In order to fully grasp the implications of a CBDC, it is essential to first introduce monetary sovereignty (section B), as this concept lies at the core of CBDCs. The concrete concept of a CBDC, further explained in section C, widely discussed and acknowledged in the international community across various disciplines (by

- 1 See, e.g., *BIS*, Central bank digital currencies: foundational principles and core features, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025).
- 2 For an in-depth analysis, see, e.g., *Boar/Wehrli*, *BIS* 2021/114, p. 4; *Bossu et al.*, IMF Working Paper 2020/254, p. 9.
- 3 See, e.g., *Ahmat/Bashir*, Central bank digital currency: A monetary policy perspective, available at: https://www.bnm.gov.my/documents/20124/826874/CB_Digital+Currency_Print.pdf (25/3/2025); *Juhro*, in: *Warjiyo/Juhro* (eds.), pp. 263 et seq.
- 4 See, e.g., *BIS*, Central bank digital currencies: foundational principles and core features, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025).
- 5 See, e.g., *Raskin/Saleh/Yermack*, *Journal of Financial Stability* 2024/101281, p. 2.
- 6 *Atlantic Council*, Central Bank Digital Currency Tracker, available at: <https://www.atlanticcouncil.org/cbdctracker/> (25/3/2025).
- 7 Regulation (EU) 2024/1689 laying down harmonised rules on artificial intelligence (Artificial Intelligence Act), OJ L 2024/1689 of 12 July 2024.
- 8 *Council of the EU*, Artificial intelligence (AI) Act: Council gives final green light to the first worldwide rules on AI, available at: <https://www.consilium.europa.eu/en/press/press-releases/2024/05/21/artificial-intelligence-ai-act-council-gives-final-green-light-to-the-first-worldwide-rules-on-ai/> (25/3/2025).
- 9 *ECB*, Report on a digital euro, available at: <https://www.ecb.europa.eu/euro/html/digital-euro-report.en.html> (25/3/2025).
- 10 *European Commission*, Proposal for a Regulation of the European Parliament and of the Council on the establishment of the digital euro, COM(2023) 369 final.

economists, computer scientists, engineers, and legal scholars), holds the potential to facilitate the inclusion of the financially excluded¹¹ while concurrently adapting to an increasingly advanced approach in dealing with daily purchases. As a form of currency with legal tender character, it would enable individuals to carry out transactions without a commercial bank account, strengthening the monetary sovereignty of the state to govern its own money while reducing external influence. Following this foundational discussion, the paper examines CBDCs in three distinct regions: the People's Republic of China (PROC) (section D. I), characterized by an open and advanced implementation of the e-CNY;¹² the United States (section D. II), following a conservative stance and exhibiting reluctance to embrace its own Digital Dollar (DD); and the EU (European Monetary Union [EMU]) (section D. III), which remains in the process of developing its own digital currency, the DE, having yet to take a definitive step but showing clear signs of interest in establishing its own CBDC.

By analysing these different approaches, the paper highlights diverse implementations of CBDCs and their broader implications, given the significant differences in cultural, economic, and geopolitical factors. These analyses are structured into three subsections, followed by a conclusion (section E), offering a comparative perspective.

B. Addressing Monetary Sovereignty

After law itself, *Bodin* (1576) observes that in every well-ordered state there is nothing of greater consequence than the title, value, and measure of coins. And it is the sovereign alone, who is endowed with the power of coining money.

“[...] [o]r il n’y a rien de plus grande consequence apres la loy, que le tiltre, valeur, et pied des monnoyes, comme nous avons monstré en un traicté àpart: et en toute Republique bien ordonnee, il n’y a que [...] souverain qui ayt ceste puissance”.¹³

Reflecting the assertion made by *Cipollone*, this dogma is still in practice today: the state holds the regulatory power over the use of money while (most) legislators have entrusted central banks with issuing public money and maintaining confidence in the monetary system.¹⁴

11 See also, in this regard, e.g., *Bossone*, CBDC and financial inclusion: Changing the paradigm (Part 1), available at: <https://blogs.worldbank.org/en/allaboutfinance/cbdc-and-financial-inclusion-changing-paradigm-part-1> (25/3/2025).

12 The e-CNY often being referred to as the “longest-running and most advanced large-scale CBDC pilot globally”; see *Digital Euro Association*, Ahead of the digital euro: Public Digital Euro Working Group – The Chinese digital yuan, available at: <https://7869715.fs1.hubspotusercontent-na1.net/hubfs/7869715/The%20Chinese%20digital%20yuan%20Article.pdf> (25/3/2025).

13 *Bodin*, p. 78.

14 *Cipollone*, Monetary sovereignty in the digital age: the case for a digital euro, available at: <https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp240927~11ed8493a4.en.html> (25/3/2025).

There are many differing opinions in literature regarding the scope of this principle (in the words of *Lô Diatta*, “[i] est plus facile d’affirmer le principe de souveraineté monétaire de l’Etat que de préciser son contenu réel”).¹⁵

For example, *Treves*, has defined it as principle, which “includes the power to define a monetary unit, to define notes and coins in multiples of that unit and to require that payments in such notes and coins be accepted as legal tender at nominal value”,¹⁶ whereas *Fawcett* extends the definition to enabling the State “to issue money in defined units of account; to regulate its use as currency in the territory of the State, and in particular the conditions, including rates, of its exchange there [within the state’s territory] for foreign currencies; to control the operation of currency balances by non-residents; and to control also transactions involving the currency entered into by its residents when abroad”.¹⁷

Martha, similar to *Fawcett*, recognizes monetary sovereignty as “[...] a State’s undeniable power, recognized by international law^[18], to regulate its own currency, i.e. the power to issue or designate money with legal tender character, to impose exchange control and exchange restrictions and to select the mechanisms through which the internal and external value of the money is determined and maintained”.¹⁹

*Burdeau*²⁰ and *Carreau*²¹ take a similar approach, considering monetary sovereignty to be more than just defining monetary units and giving them legal tender value. In a more comprehensive sense, it also encompasses regulation and control of the national money supply by means of the supervision of credit to the economy.

Lastly,²² *Mann* extends the meaning of monetary sovereignty in the broadest sense, including “much more than the mere issue of money in the legal sense. It comprises the whole of monetary, credit, fiscal, and budgetary policy as well as

15 For an in-depth analysis, see, e.g., *Lô Diatta*, IV. Effets juridiques des Unions monétaires § 1 Les effets sur les Membres paras. 10 et seq., who explores the scope of the term *monetary sovereignty* in detail.

16 *Treves*, in: Giovanoli (ed.), p. 117.

17 *Fawcett*, British Year Book of International Law 1964/40, p. 49.

18 See in this regard also *Zimmermann*, EJIL 2013/3, p. 799 with further reference provided in footnote 6.

19 *Martha*, Common Mkt. L. Rev. 1993/4, p. 752.

20 *Burdeau* defines it as a sovereign right that is not limited to the strict power of issue but which extends more generally to the regulation of the entire national monetary system, which consequently includes the control of the volume of the money supply; see *Burdeau*, in: Kahn (ed.), p. 412.

21 *Carreau* understands it in relation to fixing the value of its currency by determining the rate—or price—at which it is exchanged for other national currencies and the use that can be made of its currency, in doing so fixing its convertibility, controlling the national money supply by means of the supervision of credit to the economy; see *Carreau*, Recueil des Cours de l’Académie de droit international de La Haye 1998/274, pp. 371–372.

22 The selected authors and their approaches to the interpretation of monetary sovereignty are not exhaustive. Addressing all interpretations would exceed the scope of this paper, but it is important to emphasize that this concept is broader than a single perspective and is discussed extensively in the interdisciplinary literature (see also, in this regard, e.g., *Prates*, in: *Bonizzi/Kaltenbrunner/Ramos* (eds.) pp. 233 et seq.).

those measures which economists tend to include in the concept of money, [...] its supply and use, the control of inflation, interest rates, exchange control [...]”.²³ A detailed exploration of these different approaches can be found in the works of *Lô Diatta*²⁴ and *Prates*,²⁵ who critically examine the various definitions and their implications.

The ability to determine and/or evaluate the extent of a sovereign’s wealth, to identify characteristic features of it, but also to determine the conditions for the printing and denomination of its monetary units and relations with foreign currencies are all essential features of monetary sovereignty.²⁶ As *Zimmermann* has pointed out, the nature of monetary sovereignty is “essentially dynamic, with both its positive and normative components being subject to constant evolution, thereby enabling the concept to adjust to the changing economic environment brought about by increasing globalization and financial integration.”²⁷

C. Currency in Transition: Facilitating the Understanding of a CBDC

A closer analysis requires clarifying the purpose and role of central banks. Central banks issue two types of money, physical cash (widely accessible and peer-to-peer) and electronic central bank deposits (reserves or settlement balances and typically only accessible to qualifying financial institutions). They also provide infrastructure to support private money, which is available through electronic commercial bank deposits.²⁸ Central banks support commercial banks by settling interbank payments, using CBM,²⁹ enabling convertibility between the latter and commercial bank money through banknote provision and being offered contingent liquidity through the lender of the last resort function.³⁰

And this is where CBDC takes centre stage: As shown above, a CBDC is a digital form of CBM. Forms of CBM, banknotes, coins and also, if introduced, a CBDC, are issued by a central bank and express the monetary sovereignty of a country, representing a public good (therefore also referred to as public money).³¹

23 *Mann*, p. 509, although his perspective has been subject to criticism by *Lô Diatta*, § 1 Les effets sur les Membres, para. 34.

24 *Lô Diatta*, § 1 Les effets sur les Membres, paras. 10 et seq.

25 *Prates*, in: *Bonizzi/Kaltenbrunner/Ramos* (eds.), pp. 230 et seq.

26 See, e.g., *Biankola/Nzaou-Kongo*, *African Review of Law and Critical Thinking* 2020/1, pp. 30 et seq.

27 *Zimmermann*, *EJIL* 2013/3, p. 806.

28 See, e.g., *BIS*, *Central bank digital currencies: foundational principles and core features*, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025).

29 See, e.g., *Adrian/Mancini-Griffoli*, *Annual Review of Financial Economics* 2021/13, pp. 72 et seq.

30 See, e.g., *BIS*, *Central bank digital currencies: foundational principles and core features*, p. 4, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025). In times of financial crisis (e.g., liquidity issues), a national central bank can act as a safety net for commercial banks to provide the funding needed and bears costs and risks that may arise.

31 *BIS*, *Central bank digital currencies: foundational principles and core features*, p. 4, available at: <https://www.bis.org/publ/othp33.pdf> (25/3/2025).

At this point, it is worth emphasizing, once and for all, how a CBDC differs from existing commercial bank money and what specific purpose it serves. While commercial bank money requires the specific user to own a bank account in order to access the digital money transfer service,³² a CBDC, by contrast, is regarded as a form in which no institutional linkage or point of reference to a commercial bank is necessary. Rather, it may enable individuals the possibility to hold a direct account with the central bank. Transactions can be carried out directly through the use of CBDC, which serves as legal tender.³³

A CBDC is characterized by the full control of a central bank over its issuance, interest rates, and circulation.³⁴ In light of this, various forms of CBDCs (account-based vs. token-based,³⁵ wholesale vs. retail,³⁶ direct vs. indirect,³⁷ and centralized vs. decentralized³⁸) are being explored both in scholarly discourse and in global practice.³⁹

32 Commercial bank money is created by commercial banks through lending. When a bank issues a loan, it credits the borrower's account with an amount, thereby creating new money. Therefore, it is not money directly issued by the central bank. This money exists as electronic entries in bank accounts. For an in-depth analysis, see, e.g., *Mancini-Griffoli et al.*, IMF Staff Discussion Notes 2018/8, pp. 7 et seq.; *Abmat/Bashir*, Central bank digital currency: A monetary policy perspective, available at: https://www.bnm.gov.my/docs/20124/826874/CB_Digital+Currency_Print.pdf (25/3/2025).

33 See, e.g., *Jiang*, Seton Hall Law Review 2023/54, pp. 81 et seq.

34 See, e.g., *Adrian/Mancini-Griffoli*, Annual Review of Financial Economics 2021/13, pp. 72 et seq.; *BIS*, Central bank digital currencies: foundational principles and core features, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025).

35 For an in-depth analysis, see, e.g., *Bossu et al.*, IMF Working Paper 2020/254, p. 9; *Garratt et al.*, Token- or Account-Based? A Digital Currency Can Be Both, available at: <https://libertystreeteconomics.newyorkfed.org/2020/08/token-or-account-based-a-digital-currency-can-be-both/> (25/3/2025); *Birne*, Zeitschrift für Europäisches Privatrecht 2024/2, pp. 407 et seq.: The main difference between account- and token-based models lies in the verification process. The token-based system entails an authentication verification, while the account-based model requires an identity verification.

36 See, e.g., *Birne*, Zeitschrift für Europäisches Privatrecht 2024/2, pp. 407 et seq.; *Panetta*, Demystifying wholesale central bank digital currency, available at: <https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220926~5f9b85685a.en.htm%20l> (25/3/2025). While a wholesale CBDC is designed specifically for financial institutions for use in interbank transactions and securities trading, a retail CBDC is intended to be accessible to the general public, including consumers and non-bank entities.

37 See, e.g., *BIS*, Central bank digital currencies: foundational principles and core features, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025). In a direct access model, end users have the ability to manage their retail CBDC units themselves without the involvement of third parties; conversely, an indirect access model involves end users accessing and conducting transactions with their retail CBDC units through intermediaries.

38 See, e.g., *Birne*, Zeitschrift für Europäisches Privatrecht 2024/2, pp. 407 et seq.; *Rahman*, Munich Personal RePEc Archive 2022/111361, pp. 2 et seq.; *BIS*, Central bank digital currencies: foundational principles and core features, available at: <https://www.bis.org/publ/othp33.htm> (25/3/2025). In a centralized infrastructure, the central bank provides, operates, and processes all transactions, whereas in a decentralized infrastructure, end users or intermediaries execute transactions without the central bank's direct intervention.

39 At this point, it cannot be ruled out that other forms may emerge, or that CBDCs could develop or change into other forms. See also, in this regard, *Anthony/Michel*, A Breakdown of the Different CBDC Models, available at: <https://www.cato.org/blog/breakdown-different-cbdc-models> (25/3/2025).

There are several possible reasons for introducing a CBDC, including internal needs as well as external pressures.⁴⁰ Arguably the most important objective is that CBDCs are seen as a tool to safeguard monetary sovereignty against emerging threats posed by private currencies or foreign CBDCs, that is, the threat that the domestic population “shift from using the official currency to an alternative denominated in a different unit of account”.⁴¹ Furthermore, there is a growing concern that the domestic population is increasingly resorting to digital forms of payment to the detriment of cash. While individuals may rely on their own domestic currency, the payment tools they turn to are becoming increasingly digital (e.g., credit cards, online payment service providers, etc.).⁴²

Further considerations also play a significant role: A CBDC could increase payment efficiency,⁴³ reduce transaction costs,⁴⁴ facilitate cross-border payments,⁴⁵ and reduce maintenance costs of physical money.⁴⁶ It has the potential to make a substantial impact in combating illicit payments,⁴⁷ the state staying competitive and resilient in the ever-evolving payment market,⁴⁸ improve the financial inclusion of a segment of a population without a bank account⁴⁹ target the lower bound policy and clamp down on counterfeiting. The aspect of monetary sovereignty can be categorized here as both an internal need and an external pressure: the internal aspect reflects the need for a state to enforce monetary sovereignty over its own territory and people, while the external pressure represents the requirement to uphold the independence of the currency choice without interference from foreign policies.

40 See, e.g., *Jiang*, *Seton Hall Law Review* 2023/54, pp. 83 et seq.

41 *Brooks*, Staff Discussion Paper/Bank of Canada 2021/17, p. 3; see also *Diez de los Rios/Zhu*, CBDC and Monetary Sovereignty, available at: <https://www.bankofcanada.ca/2020/02/staff-analytical-note-2020-5/> (25/3/2025).

42 See, e.g., *Hilpert/Tokarski*, SWP Comment 2024/48, p. 6.

43 See, e.g., *Bindseil*, ECB Working Paper Series 2020/2351, pp. 5 et seq.

44 As a transfer from a bank deposit into a CBDC would not require the individual to withdraw money at an ATM and the central bank would not charge a transaction fee due to the omission of a commercial bank as an intermediary; see also, in this regard, *BIS*, Central bank digital currencies: financial stability implications, available at: https://www.bis.org/publ/othp42_fin_stab.pdf (25/3/2025).

45 See, e.g., *BIS*, Central bank digital currencies for cross-border payments, available at: <https://www.bis.org/publ/othp38.pdf> (25/3/2025): Cross-border payments are often costly due to the involvement of a high number of intermediaries, experience long transaction delays, suffer from low traceability and a lack of transparency, and there is a high possibility of certain jurisdictions having inadequate access to the global financial systems.

46 See, e.g., *Bindseil*, ECB Working Paper Series 2020/2351, pp. 5 et seq. (25/3/2025).

47 *Ibid.*, pp. 4 et seq.

48 See, e.g., *Jiang*, *Seton Hall Law Review* 2023/54, pp. 89 et seq.: “Introducing a CBDC can diversify domestic payment systems [addressing issues associated with a concentrated market]. [...] [As] private payment systems benefit from strong network effects such as benefits of aggregating data to provide additional services [resulting in] monopolies, high barriers to entry, and high costs for merchants.” CBDCs could disrupt these monopolies “by introducing more actors into the payment market”.

49 *Ibid.*, pp. 86 et seq.

While a CBDC system has its merits, privacy risks for citizens⁵⁰ (specifically data protection issues relating to digital payments) and the risk of potential cyber-attacks must not be disregarded. Relying on digital systems entails significant dangers (and at present, the extent of these dangers cannot be fully assessed), owing to the fast-paced digitalization of financial services. A CBDC cannot “be bulletproof to cyber-attacks”;⁵¹ nowadays, nothing is exempt from this threat. Yet, delaying action purely based on fear paralysis or following the proverb, “out of sight, out of mind”, is also not the right course of action. Inaction will lead to stagnation, missed opportunities, and a failure to adapt to changing circumstances—taking action, even with the awareness of all the potential risks, provides valuable insights in practice, not just theoretical dogma.

It should not be overlooked that the implications of a CBDC extend to the influence within which private and/or foreign currencies can exert influence on the domestic financial system. As mentioned above, a CBDC could, on one hand, safeguard a country’s monetary sovereignty and, on the other, enable it to remain assertive in the financial sector.⁵² The nature of monetary sovereignty has adapted once again in its dynamic feature, evolving in the digital realm.

D. CBDC approaches in a comparative global perspective: Contrasting Goals

There has been much debate over which country was the first to introduce a CBDC. Some consider it to be the Bahamas, which introduced a CBDC (*the Sand Dollar*) in 2020,⁵³ while others claim that Finland, whose central bank introduced the Avant Smart Card (*Avantin-kortti*) in 1993, should be considered as the first to do so.⁵⁴ If the latter is the case, the fact that the Avant Smart Card was eventually abandoned in the early 2000s, is, at first glance, alarming for future CBDCs. However, it must be considered that the digital timeline and financial behaviour of citizens has drastically changed over the last two decades.

Out of 134 countries, only three have, at present, fully launched a CBDC (Jamaica: *Jam-Dex*,⁵⁵ the Bahamas: *Sand Dollar*⁵⁶ and Nigeria: *e-Naira*),⁵⁷ whilst 44 countries

50 *Ibid.*, pp. 105 et seq., defining the term of *privacy* in this sense and examining its relevance to CBDCs.

51 See also, in this regard, e.g., *Tian/Zhao/Ong*, Finance Research Letters 2023/53, p. 2.

52 See also, in this regard, e.g., *Brauneck*, EuZW 2024/9, pp. 397 et seq.

53 See, e.g., *Dorst*, Digital Dollars for Online Tea, available at: <https://www.imf.org/external/pubs/ft/fandd/2021/03/fighting-pandemic-disruption-with-innovation-dorst.htm> (25/3/2025).

54 See, e.g., *Stanley*, The Ascent of CBDCs, available at: <https://www.imf.org/en/Publications/fandd/issues/2022/09/Picture-this-The-ascent-of-CBDCs> (25/3/2025).

55 For further information on the *Jam-Dex*, see *Bank of Jamaica*, CBDC FAQs, available at: <https://boj.org.jm/core-functions/currency/cbdc/cbdc-faqs/> (25/3/2025).

56 For further information on the *Sand Dollar*, see the official homepage, available at: <https://www.sanddollar.bs/about> (25/3/2025). For a more in-depth discussion of the launch of the Sand Dollar, see *Digital Euro Association*, Lessons from the first implemented CBDC: the Sand dollar, available at: <https://blog.digital-euro-association.de/lessons-from-the-sand-dollar> (25/3/2025).

57 For further information on the *e-Naira*, see the official homepage, available at: <https://enair.gov.ng> (25/3/2025).

are in a pilot phase (among those are the EMU and the PROC) and 20 countries are still in the development phase (including the United Kingdom, Canada and Taiwan).⁵⁸ Among these countries, the launched CBDCs have a relatively low adoption rate and fell flat with consumers.⁵⁹

This paper will focus, however, on three selected global players, exhibiting drastically contrasting policies and approaches to CBDCs: The PROC, the EU (EMU) and the United States, as they present divergent trajectories of their approaches to CBDCs—one having achieved remarkable success within its pilot phase (e-CNY), while the EU is currently working on the introduction of a CBDC for its EMU and lastly, a domestic CBDC being banned by President *Trump*.

I. The People's Republic of China and the Digital Yuan: A hands-on and practical approach fit for a fast-paced society

The PROC belongs to the pioneers in the field of CBDCs. The Digital Yuan (e-CNY) is already an effective payment method as legal tender⁶⁰ in 29 pilot⁶¹ areas within the PROC. A key strength of the e-CNY is its ease of access: while transactions can be made using an account-based e-wallet (digital wallet),⁶² where the registration (on Chinese app stores) is only available to those living in pilot cities (a similar system to *Alipay* or *WeChat Pay [Tenpay]*, by scanning QR codes), offline transactions by e-CNY are also supported.⁶³

58 An overview is provided by the *Atlantic Council*, Central Bank Digital Currency Tracker, available at: <https://www.atlanticcouncil.org/cbdctracker/> (25/3/2025).

59 See, e.g., *Digital Euro Association*, Lessons from the first implemented CBDC: the Sand dollar, available at: <https://blog.digital-euro-association.de/lessons-from-the-sand-dollar> (25/3/2025); *Aurazo et al.*, BIS Papers 2024/151, p. 3; *Noll*, Observations from the Retail CBDCs of the Caribbean, available at: <https://www.kansascityfed.org/research/payments-system-research-briefings/observations-from-the-retail-cbdcs-of-the-caribbean/> (25/3/2025).

60 See, e.g., *People's Bank of China*, Progress of Research & Development of E-CNY in China, available at: www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf (25/3/2025).

61 Whereas the e-CNY is “past the ‘pilot’ stage [...] with active deployments large-scale across many of the largest cities in China and active encouragement of its use”. For pilot areas, added in chronological order, see *Huang*, A Comprehensive Guide to e-CNY/Digital Yuan, available at: <https://chinabitcoinbook.com/?p=126> (25/3/2025); see also *Huang*, A 2024 Overview Of The E-CNY, China's Digital Yuan, available at: <https://www.forbes.com/sites/digital-assets/2024/07/15/a-2024-overview-of-the-e-cny-chinas-digital-yuan/> (25/3/2025).

62 See, e.g., *People's Bank of China*, Progress of Research & Development of E-CNY in China, available at: www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf (25/3/2025).

63 See, e.g., *People's Bank of China*, Progress of Research & Development of E-CNY in China, available at: www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf (25/3/2025); *Yunyun*, 中国央行推出带有动态二维码的实体 CBDC 卡，推动数字人民币应用 (English translation: China's central bank has launched a physical CBDC card with a dynamic QR code to promote the adoption of the digital yuan), available at: <https://www.longhuaiyiyongang.com/3093.html> (25/3/2025).

The introduction of the e-CNY is motivated by four main reasons. First, it aims to provide a secure retail payment system for an economy in which technological development plays a pivotal role; second, against the background of the importance of tech companies (i.e. *Alipay* and *WeChat Pay [Tenpay]*) offering retail payment infrastructures,⁶⁴ it shall provide backup or redundancy to the retail system to meet systematic risks stemming from these infrastructures; third, it shall foster financial inclusion and, fourth, it shall improve cross-border payments.⁶⁵ Looking at the second reason, it becomes evident that the e-CNY serves the objective of monetary sovereignty, as the e-CNY is seen as a tool to safeguard the well-functioning of the Chinese monetary system consisting of the PROC and the commercial banks.⁶⁶ But also the fourth reason is marked by this objective, as the e-CNY is perceived as a tool to support China's global ambitions. It is hoped that the e-CNY is also used in foreign countries.⁶⁷ In this context, the e-CNY could serve as a means to extend China's monetary sovereignty internationally. While these several official reasons have been put forward, it is also argued that the implementation of the e-CNY serves the purpose of social control.⁶⁸

Although an official CBDC law has not yet been issued, the Central Bank of the PROC (PBOC) adopted strict compliance with regulations⁶⁹ on the administration of the *Renminbi* (RMB) as one of its key principles of the institutional design of its CBDC system.⁷⁰ To protect privacy and user information in its CBDC design, the institutional design of a managed anonymity has been implemented:⁷¹

64 See, e.g., *Soderberg et al.*, IMF Fintech Note 2022/4, p. 6.

65 See, e.g., *BIS*, E-CNY: main objectives, guiding principles and inclusion considerations, available at: https://www.bis.org/publ/bppdf/bispap123_e.pdf (25/3/2025).

66 *Ibid.*

67 See, e.g., *Kshetri*, *Journal of Contemporary China* 2023/139, p. 94.

68 See, e.g., *Kshetri*, *Journal of Contemporary China* 2023/139, p. 104; *Subrahmanyam*, *China's Digital Currency: The hopes and fears of the e-CNY*, *China Currents* 2023/1, available at: <https://www.chinacenter.net/2023/china-currents/22-1/chinas-digital-currency-the-hopes-and-fears-of-the-e-cny/> (25/3/2025).

69 In particular regulations regarding anti-money laundering and countering the financing of terrorism, the administration of foreign exchange, and data and privacy protection; *People's Bank of China*, Progress of Research & Development of E-CNY in China, available at: www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf (25/3/2025). See also, e.g., Order No. 5 [2020] of the People's Bank of China (Implementation Measures of the People's Bank of China for Financial Consumer Protection), available at: www.pbc.gov.cn/en/3688253/3689009/3788480/4121916/index.html (25/3/2025), which already establishes a legal framework regarding the data and privacy protection of financial consumers within the Chinese financial system.

70 *People's Bank of China*, Progress of Research & Development of E-CNY in China, available at: www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf (25/3/2025).

71 In the words of *Changchun Mu*, the Director-General of the Digital Currency Institute at the People's Bank of China, referring to *Agustín Carstens*, General Manager of the BIS, a completely anonymous CBDC may not be feasible; see *Mu*, *Balancing Privacy and Security: Theory and Practice of the E-CNY's Managed Anonymity*, available at: www.pbc.gov.cn/en/3935690/3935759/4696666/2022110110364344083.pdf (25/3/2025); see also *Jiang*, *Seton Hall Law Review* 2023/54, p. 73.

According to the PBOC, “[t]he e-CNY system collects less transaction information than [a] traditional electronic payment system and does not provide information to third parties or other government agencies unless stipulated otherwise in laws and regulations [...] [by setting up] an information firewall, and [...] implement[ing] information security and privacy protocols, such as appointing responsible persons for maintenance, establishing business China wall, applying a tiered authorization system, putting in place checks and balances, and conducting internal audits. Any arbitrary information requests or use are prohibited”.⁷² Only when the legal threshold of Anti-Money Laundering- or Combating the Financing of Terrorism-regulations are met, can user data be accessed.⁷³

Even though the PBOC has experimented with decentralized ledger technology, it has opted for a standard centralized ledger, meaning full control and surveillance for the state over the issuance, regulation and management of its currency. A centralized software maintained by a government provider has access to user data and is able to track and monitor transactions (such as periodic transaction reports).⁷⁴ This way, regulators can also incorporate the e-CNY into legal enforcement action such as the restriction on spending and the possession of a certain number of account-based wallets.⁷⁵ This ties together with the so-called “Dishonest Persons subject to Enforcement” (DPE) system. Under Chinese law, if a citizen is incapable of meeting “legal obligations arising from a court judgment, and deliberately evades liability without justification, the Court can include that person in the [DPE-]list”.⁷⁶ The government is able to regulate financial capabilities of its citizens, when certain legal thresholds are met. Ultimately, this makes the e-CNY a surveillance tool for the state and shows that the aforementioned information firewall is subordinate to legislation on social control and public security.

72 *People’s Bank of China*, Progress of Research & Development of E-CNY in China, available at: www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021072014364791207.pdf (25/3/2025), emphasising the right of users to revoke relevant permissions at any time, causing the e-CNY app to stop processing activities related to personal information. See also *Mu*, Balancing Privacy and Security: Theory and Practice of the E-CNY’s Managed Anonymity, available at: www.pbc.gov.cn/en/3935690/3935759/4696666/2022110110364344083.pdf (25/3/2025).

73 *Mu*, Balancing Privacy and Security: Theory and Practice of the E-CNY’s Managed Anonymity, available at: www.pbc.gov.cn/en/3935690/3935759/4696666/2022110110364344083.pdf (25/3/2025).

74 See, e.g., *Wang*, *Computer Law & Security Review* 2023/50, pp. 7 et seq.

75 See, e.g., *Huang/Li*, *Banking and Finance Law Review* 2023/3, p. 19; *Upstox News Desk*, Beyond cash: Will the digital yuan redefine money?, available at: <https://upstox.com/news/upstox-originals/investing/beyond-cash-will-the-digital-yuan-redefine-money/article-144477/> (25/3/2025); *Huang*, A 2024 Overview Of The E-CNY, China’s Digital Yuan, available at: <https://www.forbes.com/sites/digital-assets/2024/07/15/a-2024-overview-of-the-e-cny-chinas-digital-yuan/> (25/3/2025); *Digital Euro Association*, Ahead of the digital euro: Public Digital Euro Working Group: The Chinese digital yuan, available at: <https://7869715.fs1.hubspotusercontent-na1.net/hubfs/7869715/The%20Chinese%20digital%20yuan%20Article.pdf> (25/3/2025).

76 See *Huang/Li*, *Banking and Finance Law Review* 2023/3, p. 19 with further references provided in footnotes 56 et seq.

It is no surprise that the PROC already has a well-established pilot program considering the fact that, according to the research conducted by *iiMedia*⁷⁷ (2024), mobile payments⁷⁸ are heavily favoured (73.2% of transactions) in comparison to cash payments (63.46%) and physical bank card swiping (46.4%) among consumers in the PROC,⁷⁹ demonstrating the demand for convenience and payment efficiency. This is in line with the latest study by China Internet Network Information Center (CNNIC), which shows that the number of online payment users in China has reached a record high (954 million users), resulting in an increasing usage rate of e-CNY.⁸⁰ The transition to the e-CNY has been facilitated by enabling users to download the official e-CNY wallet within the well-established platforms *Alipay* and *WeChat Pay*⁸¹ and providing incentives to the citizens in pilot areas (free giveaways of e-CNY),⁸² which generated further interest in the population. The use of e-CNY is also not limited to citizens of the PROC.⁸³ Moreover, cross-border e-CNY initiatives (such as between Shenzhen and Hong Kong) and are particularly noteworthy.⁸⁴ It should also be emphasized that the PROC constitutes an essential

77 For more info regarding the research institute *iiMedia*, a Chinese market research and data analytics firm, available at: <https://www.iimedia.cn/about> (25/3/2025).

78 The most prominent mobile payment providers are *Alipay* by *Ant*, based in Hangzhou, and *WeChat Pay (Tenpay)* by *Tencent*, based in Shenzhen; in this regard also *Digital Euro Association*, Ahead of the digital euro: Public Digital Euro Working Group: The Chinese digital yuan, available at: <https://7869715.fs1.hubspotusercontent-na1.net/hubfs/7869715/The%20Chinese%20digital%20yuan%20Article.pdf> (25/3/2025).

79 See *Lee*, 艾媒咨询 | 2024 年中国移动支付行业发展状况与消费行为调查数据 (English translation: *iiMedia Consulting | Survey data on the development status and consumer behavior of China's mobile payment industry in 2024*), available at: <https://www.iimedia.cn/c1061/103479.html> (25/3/2025). Since consumers use more than one payment method, the survey results show overlapping percentages, with mobile payment, cash, and bank card usage each being counted separately.

80 CNNIC, The 53rd Statistical Report on China's Internet Development, available at: <https://www.cnnic.com.cn/IDR/ReportDownloads/202405/P020240509518443205347.pdf> (25/3/2025). As of December 2023, the user size of online payment in PROC had reached 954 million, up 42.43 million from December 2022.

81 See *Hirschfeld*, *Alipay and WeChat Install e-CNY Wallet Function*, available at: <https://www.paymentsjournal.com/alipay-and-wechat-install-e-cny-wallet-function/> (25/3/2025).

82 See, e.g., *Aguignier*, China's Digital Currency (I): A Sailing Ship, available at: <https://www.institutmontaigne.org/en/expressions/chinas-digital-currency-i-sailing-ship> (25/3/2025): For example, Shenzhen issued 50,000 e-CNY red envelopes, a total of 10 million RMB, for a one-week trial in October 2020.

83 See, e.g., *huaxia*, China issues e-CNY user guide to optimize mobile payment for foreigners, available at: <https://english.news.cn/20240318/90ab82bc01444d34b0649c42010b253/c.html> (25/3/2025): Since 2024, the e-CNY can also be accessed by non-Chinese citizens, through the implementation of the e-CNY in the App Store and Google Play to download and install the digital yuan app, where a registration can be completed using mobile phone numbers from over 210 countries.

84 See, e.g., *Hong Kong Monetary Authority*, Hong Kong Monetary Authority welcomes pilot launch of the Shenzhen-Hong Kong cross-boundary data validation platform, available at: <https://www.hkma.gov.hk/eng/news-and-media/press-releases/2024/05/20240506-4/> (25/3/2025).

pillar of *Multiple CBDC Bridge* (m-Bridge), a project for cross-border payments.⁸⁵ The international use of the e-CNY has led to concerns that this might facilitate a sanction proof payment system or even an alternative to SWIFT.⁸⁶ Not surprisingly, for some the PROC “is on track to becoming the world’s top country for cash-free transactions”.⁸⁷ And yet, it is questionable whether such transactions are made by means of the e-CNY, given that the e-CNY still has a low usage rate compared to *Alipay*.⁸⁸ Moreover, there still appears to be some scepticism of the e-CNY prevailing in the Chinese population.⁸⁹ This may also be the reason for the fact that the PBOC “is using a mix of persuasion and arm-twisting to roll out the digital currency”.⁹⁰

II. Push and Pull: The United States’ frozen CBDC ambitions (If you can’t beat them, join them?)

In global competition, the United States dominates trade and finance—and a need to further push its growth by introducing a CBDC (while bearing the risk of harming commercial banks) has been questioned by the Federal Reserve (Fed): could a CBDC truly “improve [...] [an] already safe and efficient U.S. domestic payments system”?⁹¹ More than doubting the usefulness of issuing a Digital Dollar (DD), the Fed recognized the potential (geo-)political disruption and data security risks it might cause, and refrained from immediate action (beside conducting extensive research in this matter). The DD has nevertheless stayed on its radar for many years, as the possibility of strengthening the USD by facilitating international transactions was on the table.

85 *BIS*, Central banks of China and United Arab Emirates join digital currency project for cross-border payments, available at: <https://www.bis.org/press/p210223.htm> (25/3/2025).

86 *Chimits*, The e-CNY will not help the yuan displace the dollar any time soon, available at: <https://merics.org/en/comment/e-cny-will-not-help-yuan-displace-dollar-any-time-soon> (25/3/2025).

87 See, e.g., *huaxia*, China leads race to become world’s top cashless society, says British expert, available at: <https://english.news.cn/20230706/5c897da92ff1453b93aa4f63a840b297/c.html> (25/3/2025), citing *Kent Matthews*.

88 See, e.g., *Rawat*, The Lackluster Past and Promising Future of China’s Central Bank Digital Currency, available at: <https://business.cornell.edu/hub/2024/04/17/lackluster-past-promising-future-chinas-central-bank-digital-currency/> (25/3/2025): Since the inception of the e-CNY, only 260 billion USD of value has been processed through it, compared to 17 trillion USD processed by *Alipay* each year.

89 See, e.g., *Von Carnap*, The digital yuan struggles to find Chinese shoppers willing to spend it, available at: <https://merics.org/de/kommentar/digital-yuan-struggles-find-chinese-shoppers-willing-spend-it> (25/3/2025).

90 See, e.g., *Subrahmanyam*, China’s Digital Currency: The hopes and fears of the e-CNY, *China Currents* 2023/1, available at: <https://www.chinacenter.net/2023/china-currents/22-1/chinas-digital-currency-the-hopes-and-fears-of-the-e-cny/> (25/3/2025).

91 *Board of Governors of the Federal Reserve System*, Central Bank Digital Currency (CBDC), available at: <https://www.federalreserve.gov/central-bank-digital-currency.htm> (25/3/2025).

While the Fed's hesitancy in expressing a firm position on the implementation of a DD ["without clear support from the executive branch and from Congress, ideally in the form of a specific authorizing law"] maintained the momentum of the CBDC research,⁹² President *Trump* presented a firm stance regarding this matter. Honouring his campaign promise as a pro-crypto president back in July 2024,⁹³ he decided that the risks of the DD might outweigh the benefits and signed an executive order (EO) titled "Strengthening American Leadership In Digital Financial Technology". Aiming at the creation of a Strategic Bitcoin Reserve (SBR), the EO banned the creation and issuance of a CBDC in the United States (for the current election period, at least, as an EO can be reversed by the next administration).⁹⁴ Pursuant to Section 5 lit. a of the EO, "agencies are hereby prohibited from undertaking any action to establish, issue, or promote CBDCs within the jurisdiction of the United States or abroad [except to the extent required by law]". The EO further orders in Section 5 lit. b of the EO that "any ongoing plans or initiatives at any agency related to the creation of a CBDC within the jurisdiction of the United States shall be immediately terminated, and no further actions may be taken to develop or implement such plans or initiatives". To sum up, the administration of President *Trump* seems to have considerable mistrust in digital CBM, whilst having high hopes in (private) digital assets such as cryptocurrencies.

Before the EO, there was already fierce political opposition to the idea of introducing a DD, which ultimately culminated in a bill that prohibits the Fed banks from issuing a CBDC (Anti-CBDC Surveillance State Act).⁹⁵ The bill is based on the assumption that the DD is a financial surveillance tool, posing a threat to financial privacy. At the time of writing, the legislative procedure is still in progress. The further developments remain intriguing. This being said, the chances for a DD are rather low.

III. Plans for The Digital Euro: Still in search for mission?

Since the ECB's Report on a DE⁹⁶ presented in October 2020, plans for creating the EMU's own CBDC, the DE, have become more and more concrete. In June 2023,

92 *Board of Governors of the Federal Reserve System, Money and Payments: The U.S. Dollar in the Age of Digital Transformation*, available at: <https://www.federalreserve.gov/publications/january-2022-cbdc.htm#:~:text=The%20Federal%20Reserve%20does%20not,of%20a%20specific%20authorizing%20law> (25/3/2025).

93 See, e.g., *Sigalos*, Trump proposes strategic national crypto stockpile: "Never sell your bitcoin", available at: <https://www.cnbc.com/2024/07/27/trump-bitcoin-conference-harris.html> (25/3/2025).

94 U.S. President, Strengthening American Leadership in Digital Financial Technology: Executive Order (23 January 2025); available at: <https://www.whitehouse.gov/presidential-actions/2025/01/strengthening-american-leadership-in-digital-financial-technology/> (25/3/2025).

95 H.R.5403 – CBDC Anti-Surveillance State Act of 3 June 2024.

96 *ECB, Report on a digital euro*, 2 October 2020, available at: <https://www.ecb.europa.eu/uro/html/digitaleuro-report.en.html> (25/3/2025).

the European Commission, in parallel with the ECB efforts, presently in the preparatory phase (November 2023–October 2025), has presented a legislative package (i.e. “Digital euro package”) that also includes the DER Proposal.⁹⁷ This regulation shall be based on Art. 133 TFEU, which raises competence issues, as it is still questionable whether and, if so, on what legal basis the EU may introduce a DE.⁹⁸

By complementing, not replacing, physical cash,⁹⁹ the DE would act as a digital form of CBM, issued by the ECB, for retail. Pursuant to Art. 7 DER Proposal, the DE “shall have legal tender status” (para. 1), which “entail[s] its mandatory acceptance” (para. 2). The DER Proposal elaborates on the DE’s legal tender status and provides for a tight system of exceptions to the mandatory acceptance of the DE (Art. 9–11 DER Proposal). The use of the DE requires digital payment accounts with payment service providers (e.g., commercial banks), which shows that the user does not have an account with the ECB itself.

The DE can be seen from different angles, for example, as a tool for financial inclusion¹⁰⁰ or as a possible threat to commercial banks.¹⁰¹ However, looking at the reasons put forward by the Commission and the ECB, it becomes obvious that the DE is, ultimately, about safeguarding monetary sovereignty. At the project’s core lies the threat to the role of the euro in payments, in the EU and outside posed by a shift in payment habits to private digital means of payments (offered by non-European payment providers) and by the emergence by other CBDCs and stablecoins.¹⁰² Whilst innovative e-payments solutions (e.g., e-payment wallets and mobile apps), new forms of financial assets (e.g., stablecoins) and new digital ecosystems (e.g., *Alibaba* and *Alipay*) gain more and more importance, the use of actual cash by the public is decreasing.¹⁰³ These reasons are similar to those underlying the e-CNY.¹⁰⁴ Against this background, the underlying concern is that “[l]acking a form of a CBM that can be used in the digital economy and is convertible at par with commercial bank deposits may undermine the monetary anchor role of CBM, weakening financial stability and monetary sovereignty in the EU”.¹⁰⁵

Thus, the DE lines up in a series of measures at EU level aiming at the strategic autonomy of the EU. According to *Lane*, the DE “would play a crucial role in strengthening the strategic autonomy of Europe in an increasingly fragmented

97 COM(2023) 369 final.

98 In a recent contribution, it has been argued that such a DE regulation can be based on Art. 133 TFEU, see *Palmstorfer*, *Eur. L. Rev.* 2025/1, p. 107.

99 Recital (6) DER Proposal.

100 Recital (5) DER Proposal.

101 See, e.g., *Bindseil/Cipollone/Schaaf*, Digital euro: Debunking banks’ fears about losing deposits, ECB Blog, 19 February 2024, available at: <https://www.ecb.europa.eu/press/bl og/date/2024/html/ecb.blog20240219~ccb1e8320e.en.html> (25/3/2025).

102 COM(2023) 369 final, p. 1.

103 See, e.g., *Lane*, The digital euro: maintaining the autonomy of the monetary system, available at: https://www.ecb.europa.eu/press/key/date/2025/html/ecb.sp250320_1~41c 9459722.en.html (25/3/2025).

104 See, e.g., *Hilpert/Tokarski*, SWP Comment 2024/48, p. 6.

105 COM(2023) 369 final, p. 1.

geopolitical landscape”.¹⁰⁶ Given doubts regarding the benefits of the DE in day-to-day reality and the costs of its introduction,¹⁰⁷ it is not particularly surprising that the ECB places special emphasis on the DE’s (assumed) importance of Europe’s strategic autonomy.

In brief, beyond digital trends, the reasoning put forward by the ECB and the European Commission puts the two-tier monetary system at risk, revealing a broad understanding of the concept of monetary sovereignty.¹⁰⁸ Here the term “monetary sovereignty” is not merely understood as the EU’s power to lay down a legal framework for the euro as its currency; rather, it is understood as a term describing the factual requirements for the EMU’s monetary system based on the interplay between the ECB and, in particular, commercial banks. But it is not only Europe’s reliance on foreign payment providers of card schemes (e.g., *Visa*, *Mastercard*) and mobile app payments (e.g., *Apple Pay*, *Google Pay*, *PayPal*) that concerns the ECB. In addition, platforms linking CBDCs to support cross-border payments such as the *BRICS Pay*¹⁰⁹ are seen as a challenge.

This geopolitical dimension of the DE finds its expression in provisions on the distribution of the DE to persons residing or established in third countries (Art. 19 DER Proposal) and, more importantly, on cross-currency payments (Art. 21 DER Proposal), both of which require agreements with respective third countries.

Resorting to monetary sovereignty, both the ECB and the Commission put forward a weighty reason for creating a DE. What is more, assessing the prospective effects of private digital payment systems and foreign CBDCs on the well-functioning of the EMU’s monetary system is far from an easy task. The line of reasoning is somewhat reminiscent of the emphasis placed on the importance of price stability in justifying the monetary policy programmes, Outright Monetary Transactions and Public Sector Purchase Programme, before the ECJ.¹¹⁰ Given the significance and complexity of the matter, the DE, if realized, will possibly stand its ground against a possible future challenge in the ECJ, although some scholars have held that monetary sovereignty can be defended also by other means (such as regulating the use

106 *Lane*, The digital euro: maintaining the autonomy of the monetary system, available at: https://www.ecb.europa.eu/press/key/date/2025/html/ecb.sp250320_1~41c9459722.en.html (25/3/2025).

107 See, e.g., *Bofinger/Haas*, The Digital Euro: Benefits, Costs and Risks, Expert opinion commissioned by the Bank and Insurance Division of the Austrian Economic Chambers, July 2023, p. 31, available at: https://www.wiwi.uni-wuerzburg.de/fileadmin/12010109/2023/CBDC_Gutachten_WKO_english_version_.pdf (25/3/2025).

108 See, e.g., *Martino*, Computer Law & Security Review 2024/52, pp. 1 et seq.

109 For more info regarding *BRICS Pay*, a joint venture developed by the BRICS member states to receive and make payments in their own local currencies, see the official homepage, available at: <https://www.brics-pay.com> (25/3/2025).

110 See ECJ, Case C-62/14, *Gauweiler and Others*, judgment of 16 June 2015, ECLI:EU:C:2015:400; ECJ, Case C-493/17, *Weiss and Others*, judgment of 11 December 2018, ECLI:EU:C:2018:1000. Also see the contribution by *Fabian Amtenbrink* in this issue, “The ECB’s public sector securities purchase programmes – time for a final EU (legal) assessment?”, revisiting the abovementioned decisions, which inter alia, address the delineation of monetary and economic policy in the European Economic and Monetary Union.

of private digital payment systems or foreign CBDCs.¹¹¹ Interestingly enough, the EU seems to share the same considerations as the PBOC, as both see private digital means of payments as a challenge. That said, the EU might be well advised to take into consideration that the use of the e-CNY has, so far, been limited. It remains to be seen whether the DE, if realized, can constitute an attractive alternative to other means of payment. There is reason for doubt.

E. Conclusion

Every state can unilaterally determine the scope and limits of its own national monetary management and policy. The essence of sovereignty is that the autonomy to make monetary decisions concerning one's own currency is confined to the judicial sovereignty's national territory, with exclusive competence resting with the sovereign to make such determinations. Those present in the sovereign's territory (with specified exceptions, as defined by international treaties) must adhere to the domestic monetary policy. Yet, this authority is weakened when private entities attempt¹¹² to create a network and occupy areas of uncharted realms (such as the digital sphere), outside the sovereign's direct control. Digital payments are not an alien concept, and in the case of commercial banks, the money used is directly sourced from the central banks.

Regardless of this discussion, it is undisputed that private entities have shaken the entire currency system and demonstrated that a market gap exists, which could challenge and even weaken monetary sovereignty. Against this, the creation of a CBDC can be seen as a step to reclaim this digital domain. A CBDC would require that the central bank holds and protects its role as the primary authority over the nation's money supply and monetary policy decisions, resulting in maintaining control and power. The question arises, if this is about reclaiming what originally belonged to central banks, or taking space for a novel idea, discovered by non-state-stakeholders, and rivalling it.

Due to the proliferation of CBDC prototypes in the international arena (see section D), the conversation to respect privacy and user data while monitoring cybersecurity standards (prevention of illicit financing or money laundering), safeguarding financial stability (of, for example, the euro area)¹¹³ and also political

111 See, e.g., *Brooks*, Staff Discussion Paper/Bank of Canada 2021/17, p. 19; *Bofinger*, IMK Study 2024/95, p. 16.

112 See, e.g., *Facebook* with its (already halted) own currency project *Libra/Diem*: *Berger*, How Diem became crypto's sacrificial lamb, available at: <https://www.politico.eu/article/diem-crypto-sacrificial-lamb/> (25/3/2025); *Sutton/Guida*, Facebook's crypto project sold after political backlash, available at: <https://www.politico.com/news/2022/01/31/diem-facebook-cryptocurrency-meta-00003871> (25/3/2025).

113 See, e.g., *European Commission*, Proposal for a Regulation of the European Parliament and of the Council on the establishment of the digital euro, COM(2023) 369 final, p. 3; *Jubro*, in: *Warjiyo/Jubro* (eds.) p. 264.

unions questioning the US dollar as the world's principal reserve currency,¹¹⁴ the conversation around CBDCs has progressed globally, and caught also the attention of the EU legislator.¹¹⁵

In a comparative perspective, it is undeniable that the PROC has a practice-beats-theory approach, meeting demands and ambitions of both its domestic economic system (adapting to the digital era, ensuring payment efficiency) and protecting its own monetary sovereignty by challenging global financial dynamics without being intimidated by tech giants or global competitors. The driving forces behind the e-CNY development stem from social, economic, (geo-)political and regulatory factors.

In the meantime, the BRICS+ are actively challenging the USD's global currency dominance: Their de-dollarisation-projects efforts moving full steam ahead, by relying more on foreign digital currencies, such as the RMB, in cross-border trade.¹¹⁶ Congress is well aware of that, having adopted the Chinese CBDC Prohibition Act prohibiting "money services businesses (e.g., currency exchange providers or money order issuers) from engaging in transactions involving a central bank digital currency issued by China".¹¹⁷

The question remains, whether the "Fed is falling behind as other central banks leap ahead on digital currencies"¹¹⁸—or if this was a deliberate, more effective manoeuvre in order to protect the privacy and financial autonomy of its citizens, limiting the risk of state control over one's use of money while attempting to fight other global competitors head-on and taking side with private entities. For now, the United States has cleared the path for the BRICS+ and EU to push on with their CBDCs. Concerns of more than just privacy protection remain, as the USD has responsibilities on a global (not to mention domestic) scale. Holding a special position as the backbone of the global financial system, the world's current reserve currency¹¹⁹ is under close scrutiny. The present policies explicitly delivered a firm

114 See, e.g., *Honderich*, Trump threatens 100% tariff on Brics nations if they try to replace dollar, available at: <https://www.bbc.com/news/articles/cgrwj0p2dd9o> (25/3/2025); see also *Jones*, Trump's digital dollar ban gives China and Europe's CBDCs free rein, available at: <https://www.reuters.com/markets/currencies/trumps-digital-dollar-ban-gives-china-europes-cbdc-free-rein-2025-01-28> (25/3/2025).

115 In particular to ensure *monetary sovereignty* (a nuanced analysis is provided in section B).

116 *Dolgin/Turner*, De-dollarisation: More BRICS in the wall, available at: <https://think.ing.com/articles/de-dollarisation-more-brics-in-the-wall/> (25/3/2025).

117 U.S. Congress (2023) Chinese CBDC Prohibition Act of 2023, H.R. 804, 118th Congress, available at: <https://www.congress.gov/bill/118th-congress/house-bill/804#:~:text=This%20bill%20prohibits%20money%20services,a%20government-backed%20central%20bank> (25/3/2025).

118 *Lipsky/Kumar*, The Fed is falling behind as other central banks leap ahead on digital currencies, available at: <https://www.atlanticcouncil.org/blogs/new-atlanticist/the-fed-is-falling-behind-as-other-central-banks-leap-ahead-on-digital-currencies/> (25/3/2025).

119 Even though it has been questioned due to global debt concerns, see, e.g., *Bridges*, Why the US dollar will be indispensable as the world's reserve currency—until it's not, available at: <https://www.weforum.org/stories/2025/01/us-dollar-will-be-indispensable-until-not/> (25/3/2025).

statement that, rather than engaging in competition with private digital currency entities, trust is being placed in them.

Comparatively, the European legislative agenda suggests that the DE might be coming. However, it leaves the impression that numerous issues remain unsettled and ambiguous, likely influenced by (geo)political and economic views, as this matter is inherently interdisciplinary. To avoid contradicting the existing legal frameworks within the Union and to address privacy concerns, more time might be required. The hesitancy of the legislator also evokes the idea that the latter is deliberately taking time to acquire insights from real-world CBDC-practice, rather than just from the theoretical domain where much research has already been done. This is essential for establishing a system that operates effectively. At its core, this relates to money, a particularly sensitive matter. It must also not be overlooked that the Union has recently been criticized for doing too much (overregulation). A recent study for the European Parliament on the impact of EU legislation in the area of digital and green transition, particularly on small and medium-sized enterprises, has revealed that “stakeholders are very concerned about the introduction [...] of a large number of new EU rules driving the digital and green transition. Concerns are raised in this context about the cumulative impact of the changes and the perception that rules may not be fully consistent in all cases.”¹²⁰

The issue of CBDCs requires an interdisciplinary approach. Collaboration between lawyers, computer scientists, and economists (as they must work together to build a stable, secure, and well-functioning system) is essential—if the legislator wishes to protect its own monetary sovereignty in the competition against (in particular) private entities in the long run¹²¹ and wants to rely less on international payment networks or foreign banks.

The state can choose its own monetary system, regulate its currency and govern its economy effectively in doing so by, for example, imposing exchange control, exchanging restrictions and selecting the mechanisms through which the internal and external value of the money is determined and maintained.¹²²

Only time will reveal which approach to a CBDC was the right one to choose. Perhaps, in the end, each analysed monetary sovereign will be proven right in their own decision of this matter. Time is ticking—also for the EU, which is currently facing a decision-making deadlock: should the legislator proceed with the DER proposal, or would it be better to significantly scale back the project? The answer differs depending on the approach or belief, as there is no one-size-fits-all approach.

120 Rzepecka et al., The impact of EU legislation in the area of digital and green transition, particularly on SMEs, available at: [https://www.europarl.europa.eu/RegData/etudes/STUD/2024/754213/IPOL_STU\(2024\)754213_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/STUD/2024/754213/IPOL_STU(2024)754213_EN.pdf) (27/2/2025).

121 See also, in this regard, e.g., Cipollone, Monetary sovereignty in the digital age: the case for a digital euro, available at: <https://www.ecb.europa.eu/press/key/date/2024/html/ecb.sp240927~11ed8493a4.en.html> (25/3/2025).

122 See, e.g., *Biankola/Nzaou-Kongo*, African Review of Law and Critical Thinking 2020/1, pp. 30 et seq.; *Martha*, Common Mkt. L. Rev. 1993/4, p. 752.

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