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State-led digitalization of currencies and payments as a vector for global and domestic de-dollarization?

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Abstract

The International Monetary and Financial System (IMFS) is currently facing two important movements. On one hand, the digitalization of currencies; on the other hand, an increasing effort of many countries in the world to reduce the dependency on the US dollar. This article aims therefore to investigate if these two movements may be interconnected. In particular, it aims to analyze if state-led digitalization of currencies and payments may be a vector for de-dollarization in two dimensions: i) the global economy; ii) the national economies in (partially or totally) dollarized countries. In a moment in which the US pushes for the digitalization of currencies through private assets, this article aims to provide a theoretical contribution on the role of public digital money and public digital payment systems to both curb the potential dissemination of USD-backed stablecoins, but also to reduce the dependency on the US-dollar. The research methodology combines theoretical discussions on dollarization and de-dollarization with an analysis of four concrete cases of state-led central bank digital currency (CBDC) and/or digital payment systems initiatives in economies experiencing varying levels of dollarization: Ecuador (Dinero Electrónico), Nigeria (e-Naira) and Cambodia (Bakong digital payment system) and China (e-CNY and Project mBridge). The aim is to assess the effectiveness of these top-down initiatives, driven by the states and central banks, in reducing dollarization both domestically and internationally. The main argument of the paper is that state-led digitalization (of currencies and payments) may be understood as a potential vector to foster the use of national currencies (both domestically and regionally), but it is far from enough to promote de-dollarization.

Keywords: Central Bank Digital Currencies; Dollarization; De-dollarization; Monetary sovereignty; International Monetary and Financial System.

Resumo

O Sistema Monetário e Financeiro Internacional (SMFI) enfrenta atualmente dois movimentos importantes. De um lado, a digitalização de moedas; de outro, um esforço crescente de muitos países no mundo para reduzir a dependência do dólar americano. Este artigo visa investigar se esses dois movimentos podem estar interligados. Em particular, visa analisar se a digitalização de moedas e pagamentos liderada pelo Estado pode ser um vetor para a desdolarização em duas dimensões: i) a economia global; ii) as economias nacionais em países (parcial ou totalmente) dolarizados. Em um momento em que os EUA pressionam pela digitalização de moedas por meio de ativos privados, este artigo visa fornecer uma contribuição teórica sobre o papel do dinheiro digital público e dos sistemas públicos de pagamento digital para conter a potencial disseminação de *stablecoins* lastreadas pelo dólar, mas também para reduzir a dependência do dólar americano. A metodologia de pesquisa combina discussões teóricas sobre dolarização e desdolarização com uma análise de quatro casos concretos de iniciativas estatais de moeda digital de banco central (CBDC) e/ou sistemas de pagamento digitais em economias que vivenciam níveis variados de dolarização: Equador (Dinero Electrónico), Nigéria (e-Naira) e Camboja (sistema de pagamento digital Bakong) e China (e-CNY e Projeto mBridge). O objetivo é avaliar a eficácia dessas iniciativas *top-down*, impulsionadas pelos Estados e bancos centrais, na redução da dolarização tanto doméstica quanto

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internacionalmente. O principal argumento do artigo é que a digitalização liderada pelo estado (de moedas e pagamentos) pode ser entendida como um vetor potencial para fomentar o uso de moedas nacionais (tanto doméstica quanto regionalmente), mas está longe de ser suficiente para promover a desdolarização.

Palavras-chave: Moedas Digitais de Bancos Centrais; Dolarização; Desdolarização; Soberania monetária; Sistema Monetário e Financeiro Internacional.

JEL: E42, E58, F30.

1 Introduction

The International Monetary and Financial System (IMFS) comprises the structure and the arrangements allowing for cross-border payments, international capital flows and credit, as well as exchange rate operations. History shows that its transformations over time can be slow, especially due to the role of conventions in the sphere of money and monetary systems (Keynes, 1936)³, and more fundamentally because the evolution of the IMFS implies a financial infrastructure challenge, including global credit creation and financial intermediation (Mehrling, 2022; Murau; Schwartz, 2025).

Yet, the global economy is currently facing two movements which raise the possibility of important changes at the IMFS. First of all, the digitalization of money and payments. While digital payments have been already used for many decades, in the recent period new initiatives were implemented in several countries, particularly for "fast payments". More importantly, the emergence of cryptoassets (e.g. Bitcoin and the Libra project⁴) stimulated monetary authorities all over the world to initiate research and development of Central Bank Digital Currencies (CBDCs). Later on, the appearance of stablecoins added complexity to the context, because they are perceived by many monetary authorities as a threat to monetary sovereignty. As a consequence, more than 130 Central Banks in the world are (or have been) involved in research related to CBDCs⁵. In the face of these trends, the International Monetary Fund (IMF) suggests that we are running into a "money revolution" (IMF, 2022).

The second movement possibly favoring transformations in the IMFS is not new, but it gained momentum in the recent period: the endeavors for de-dollarization. The IMFS is characterized by the hegemony of the US dollar which results in an "exorbitant privilege" for the United States of America (US), and deep negative impacts for the rest of the world, especially for the Global South. In addition to these economic problems related to the asymmetries of the IMFS, the prevailing historical moment is eloquent in showing that money is power (Strange, 1988; Aglietta *et al.*, 2018), and the dominance of the US-dollar may create severe political problems for the rest of the world. In particular, the sanctions against Russia made it evident that the US may use its currency as a weapon. The escalation of the geopolitical tensions arising from the pandemic of Covid-19, the war in Ukraine, and the economic warfare, which was brought to a new level by Trump's second administration – e.g. with the announcements of tariffs –, is strengthening in many countries the desire of de-dollarization of

⁽³⁾ See for instance Eichengreen (1994) for the transitions between the Gold Standard, the Bretton Woods (BW) System and the post-BW IMFS.

⁽⁴⁾ In 2019, Mark Zuckerberg, head of Facebook, announced a project to create a cryptoasset (Libra) which would be used for international transactions. Central Banks in many parts of the world received it as an important threat to their monetary sovereignty.

⁽⁵⁾ Data from the CBDC Tracker (https://cbdctracker.org/). One notable exception is the United States of America.

global economy. In addition to these initiatives on a regional or global scale, many countries suffering from "currency substitution" (Cohen, 1998) keep struggling to curb or reverse the dollarization of their national economies.

This article aims therefore to investigate if the two abovementioned movements – ie, digitalization of currencies and de-dollarization – may be interconnected. In particular, it aims to analyze if state-led digitalization of currencies and payments may be a vector for de-dollarization in two dimensions: i) the global economy; ii) the national economies in (partially or totally) dollarized countries. The perception is that there is a rich literature discussing dollarization and de-dollarization (e.g. Berg; Borensztein, 2000; Bourguinat; Dohni, 2002; Fields; Vernengo, 2013; Uduakobong; Babatunde, 2019l Ponsot; Rizkallah, 2024) and an emerging corpus of interesting academic literature discussing CBDCs (e.g. Kuehnlenz; Orsi; Kaltenbrunner, 2023; Peruffo; Cunha; Heines, 2023; Bibi; Canelli, 2024). Yet, there is still a lack of studies bridging both streams, and this article seeks to address this gap in the literature.

The research methodology combines theoretical discussions on dollarization and dedollarization with an analysis of four concrete cases of state-led central bank digital currency (CBDC) and/or digital payment systems initiatives in economies experiencing varying levels of dollarization. The analysis begins with the most dollarized country, Ecuador (Dinero Electrónico), followed by two partially dollarized economies, Nigeria (e-Naira) and Cambodia (Bakong digital payment system), and concludes with China, where there is no significant domestic dollarization (e-CNY and Project mBridge). The aim is to assess the effectiveness of these top-down initiatives, driven by the states and central banks, in reducing dollarization both domestically and internationally.

In addition to this introduction, the article is structured in four sections. Section 2 makes a brief literature review on dollarization and de-dollarization, discussing it through a theoretical point of view. Section 3 investigates the experiences with the implementation of digital currency and payment systems in dollarized economies (Ecuador, Nigeria and Cambodia). Section 4 discusses the implementation of a digital currency, and the project for a cross-border digital payment system in China. Section 5 presents some final remarks and policy recommendations.

2 De-dollarization: review of literature and theoretical discussions

Domestic dollarization refers to the widespread use of a foreign currency—most commonly the US dollar—within a country's own borders for purposes of saving, lending, pricing, and, in some cases, daily transactions. While it may appear as a technical monetary phenomenon, dollarization is in fact a reflection of institutional fragility, historical trauma, and strategic adaptation to macroeconomic instability. In developing and emerging economies, it is often the outcome of repeated failures in monetary governance, high inflation, and deep public mistrust in the national currency.

Today's understanding of dollarization dates back to the early 2000s. Ize and Levy-Yeyati (2003) frame domestic dollarization in terms of currency and asset substitution. In periods of high inflation or recurring exchange rate volatility, domestic economic agents—households, firms, banks—reallocate their portfolios away from domestic-currency assets toward foreign-currency instruments. When monetary authorities lack credibility, and when inflation systematically erodes the real value of domestic savings, the US dollar becomes a safer store of value and a more reliable unit of account. More broadly, in chronically unstable environments, residents rationally "self-dollarize"

as a defense against monetary mismanagement: the institutional failure of central banks justifies more radical solutions, such as currency boards or even full official dollarization (Schuler 2005). These measures, while controversial, impose discipline and credibility. However, such solutions imply permanent loss of policy autonomy and expose the country to external shocks without the buffer of exchange rate flexibility.

Dollarization is not only a rational portfolio choice—it is also a path-dependent process. Once agents begin transacting and saving in dollars, it becomes difficult to reverse the trend, even after stability is restored. This "dollarization hysteresis," as identified by Reinhart, Rogoff, and Savastano (2003), means that confidence/trust in the domestic currency may take years or even decades to rebuild. The consequences are significant. As noted by Galindo and Leiderman (2005), financial dollarization (ie, the dollarization of assets and liabilities) heightens systemic vulnerability. Currency mismatches on bank and corporate balance sheets amplify the impact of exchange rate movements, potentially triggering crises even in the absence of real sector shocks.

A political economy perspective further complicates the picture. Central banks lose control over both exchange rate and monetary policy and face constraints in acting as lenders of last resort (Ponsot 2019). Monetary sovereignty is eliminated (Tymoigne, 2020) and policy space strongly restricted, dollarized countries becoming "currency users", not "currency issuers" anymore (Tcherneva 2016). Dollarization is not only about domestic policy failures but also about the peripheral position of developing countries in the global monetary hierarchy. The dollar functions as an international anchor not only because of its stability, but because of its deep integration in trade, finance, and external debt structures (Vernengo 2006). Dollarization also reflects the strategic interests of domestic actors, such as financial institutions and savers, who favor stable foreign-currency assets These groups may form coalitions that resist reforms, making dollarization as much a political choice as a policy outcome (Frieden, 2004).

Domestic de-dollarization cannot be achieved solely through rhetoric or isolated reforms. It requires long-term institutional commitment, credible policy signals, and often the slow, patient reconstruction of public trust in the national currency. The experiences of Peru and Bolivia in the early 2000s show that successful domestic de-dollarization is not impossible. A consistent mix of macroeconomic stabilization, development of local currency financial instruments, and targeted regulatory interventions can gradually reduce domestic dollarization. Prudential measures such as higher reserve requirements on dollar deposits, limits on foreign-currency lending to borrowers without dollar income, and inflation-targeting frameworks with credible institutions were essential in shifting preferences back toward the national currency (García-Escribano; Sosa 2011). The IMF's work in this area (Kokenyne et al., 2010) has emphasized that such measures are most effective when introduced gradually and within a coherent macro-financial strategy (Kokenyne et al., 2010).

At the global level, de-dollarization refers to the deliberate reduction of the US dollar's role in international trade, finance, and reserves. While dollar hegemony and the "dollar exorbitant privilege" have long underpinned the architecture of the international monetary system, recent geopolitical and economic shifts have sparked renewed efforts—especially among emerging countries—to challenge the dollar's dominance and construct a more diversified international monetary order.

Theoretically, the foundations of dollar dominance lie in the network externalities of the US dollar: its widespread use begets further use. The dollar's role as the primary medium for trade invoicing, financial intermediation, and reserve accumulation has made it deeply entrenched in the global system. Its dominance has been supported by the scale and liquidity of U.S. financial markets and, crucially, by the political power of the U.S. state. As Eric Helleiner (2008) and Thomas Palley (2014) have emphasized, the dollar's rise was as much a geopolitical project as an economic outcome—one supported by American global influence, postwar institutions, and deliberate policy choices.

The post-2008 period and especially the 2022 sanctions against Russia have brought these critiques into sharper focus. The freezing of Russia's central bank reserves by Western governments sent a powerful signal: the dollar system is not geopolitically neutral (Kamak, 2024). Countries such as China, India, Brazil, and Turkey have since accelerated efforts to settle trade in local currencies, diversify reserves, and develop alternatives to the SWIFT system. They also began to try issuing sovereign debt in alternative currencies. Moreover, regional payment systems such as China's CIPS and Russia's SPFS appear as alternatives to dollar-centric infrastructure. However, main financial actors worldwide continue to treat US Treasury securities as the ultimate safe asset. Mehrling (2022) underscores that the dollar system is less a monetary choice than a liquidity regime—one structured through the balance sheets of global banks and the implicit backstop of the Federal Reserve.

The next section discusses the cases of three countries with different degrees of dollarization (Ecuador, Nigeria and Cambodia), in which the monetary authorities used/are using the digitalization of currencies and payments with the aim of stimulating the usage of the national currency.

3 CBDCs and digital payments as a vector for domestic de-dollarization? The cases of Ecuador, Nigeria and Cambodia

Several economies that are largely or fully dollarized have introduced central bank digital currencies (CBDCs) with the expectation that these innovations would reduce the use of the US dollar or alleviate some of the constraints imposed by dollarization. Contrary to expectations, these digital monetary instruments have paradoxically had little impact on reducing the reliance on the US dollar.

Ecuador and the 'Dinero Electrónico' (2015–2018)

The case of dollarization in Ecuador is unique, as the country has adopted a fully dollarized economy. The transition to dollarization in 2000 was a radical decision, as it involved the complete elimination of the Sucre, Ecuador's national currency, in order to escape a severe economic and political crisis that had unfolded in the late 1990s.

Rafael Correa, who served as President from 2007 to 2017 and was trained as an economist, consistently expressed his opposition to dollarization, which he viewed as the worst possible monetary arrangement from an economic perspective. Dollarization's macroeconomic sustainability hinges on two crucial conditions (Ponsot, 2019). First, the economy must maintain a structurally positive external balance in US dollars. Since the central bank is unable to create US dollar liquidity, it requires continuous inflows of USD to finance the economy and ensure financial system stability. As noticed by Kaltenbrunner (2011) for peripheral banks, the Ecuadorian banking system may find the borrowing conditions in key currency on international markets too prohibitive, or apex banks may

themselves be in crisis and unwilling to lend. Financial institutions must largely self-insure against liquidity risks, and systemic liquidity risks remain high because of the central bank's limited capacity to provide liquidity (International Monetary Fund, 2023). Liquidity shocks affecting banks ultimately impact the central bank's balance sheet, even though it does not offer liquidity facilities, as it will experience an outflow of reserve deposits. The importance of high oil prices cannot be overstated, as they provide vital dollar liquidity through increased export revenues from petroleum, Ecuador's primary economic resource. However, such favorable conditions are not guaranteed, and sharp declines in oil prices—such as those seen in the mid-2010s and 2020—can precipitate economic collapse.

The second condition concerns the economy's capacity to absorb asymmetric shocks. Under full dollarization, the policy space to respond to economic disturbances is virtually nonexistent: the exchange rate, often regarded as the "primary adjustment variable for developing economies" (Correa, 2019), cannot be manipulated anymore; ambitious monetary policy initiatives and lender-of-last-resort interventions to stabilize the economy and banking credit are unavailable; and fiscal stimulus policies face stringent constraints.

Consequently, dollarization severely constrained Rafael Correa's ambitious development strategy, which sought an alternative to the Washington Consensus and a rapid transition away from an extractivist export-led growth model. Although Correa did not attempt to abandon full dollarization, acknowledging the "ratchet effect" it created (i.e., the challenge of inspiring greater confidence in a new national currency than in the US dollar), he nevertheless sought to mitigate its constraints. Ecuadorian authorities quickly realized the necessity of developing mechanisms and instruments that would allow the country to maintain dollarization while ensuring a minimum level of liquidity and financial stability. One such mechanism involved China's emerging role as an international lender of last resort for Ecuador, with the introduction of commodity prepayment facilities through which Chinese state-owned oil and gas companies provided large upfront US dollar payments on long-term oil delivery contracts (Bradley et al., 2023). Beginning in 2010, Ecuadorian policymakers pursued a strategy aimed at implementing more active, albeit discretionary, measures—while still maintaining dollarization.

These new instruments were officially intended to "consolidate dollarization" and ensure its "sustainability" (De la Torre, 2019). This strategy involved a range of financial repression policies, such as interest rate ceilings, optimal liquidity recycling mechanisms, preferential microcredit programs, more flexible management of the International Reserve of Free Availability (i.e., dollar reserves held by the central bank), and the establishment of "liquidity defense lines"—a liquidity fund financed by the government and private banks, which indirectly allowed the central bank to provide liquidity to the government (Erraez; Reynaud, 2021). However, these measures proved insufficient for implementing active and effective discretionary policies.

The most ambitious innovation, however, was the introduction of an "electronic money system" (*dinero electrónico*), which was conceptualized by the central bank in 2014. This system, based on mobile phone-based digital currency payments secured by the Central Bank of Ecuador, aimed to replace the circulation of physical US. dollars with a digital currency that economic agents could use. To use it, individuals were required to open an account with the central bank, which centralized all transactions.

Several advantages were highlighted (Arauz et al., 2021). First, the use of *dinero electrónico* significantly reduced transaction costs associated with physical cash, which were particularly high in a dollarized economy due to the need to import U.S. banknotes and coins and replace them when worn. Second, digital currency aligned with financial inclusion goals: given the relatively high mobile phone penetration, unbanked populations—particularly those in remote mountainous and forested regions—gained access to formal financial services. Finally, *dinero electrónico* enabled the central bank to manage the International Reserve of Free Availability more flexibly, eliminating the need to anticipate future physical cash demands.

Ecuador's dinero electrónico initiative was notable for two reasons. First, it was among the earliest CBDC initiatives globally. While most central banks are now either planning or piloting CBDCs, Ecuador launched its digital currency as early as 2015. Second, the initiative was part of an effort to regain effective monetary sovereignty without abandoning full dollarization. While the "Ecuadorian digital dollar" was officially presented as a mere substitute for the US dollar, and despite an intensive communication campaign and various incentives to encourage adoption—such as payment facilitation and preferential VAT rates—dinero electrónico failed to achieve widespread acceptance. At its peak, only 500,000 users were registered, with transaction volumes barely exceeding \$10 million, and most accounts remained inactive.

The Institutionalist theory of money provides valuable insights into this outcome. Three forms of monetary confidence must be taken into account. Methodical confidence stems from routine practices and the repeated execution of transactions, which sustain the smooth functioning of exchanges and the effective settlement of debts. This is complemented by hierarchical confidence, which refers to the central bank or the state's capacity to uphold the stability of the currency and the banking system, as well as the long-term viability of the payments system. Finally, ethical confidence pertains to the legitimacy and shared acceptance of the values and principles underpinning the monetary compromise that holds society together. When one or more of these pillars of confidence is eroded, the monetary compromise is called into question, and may ultimately disintegrate. In this sense, monetary crises are inherently political crises (Aglietta et al., 2018).

Private banks played a crucial role in undermining methodical confidence in *dinero electrónico* by encouraging their customers to favor traditional bank cards for payments and maintain their liquid assets in private bank accounts. "Ethical confidence" also failed to materialize, as many people perceived *dinero electrónico* as a disguised attempt to abandon dollarization. This perception raised concerns about a potential shift away from the existing monetary regime, breaching the implicit monetary contract between the State and Ecuadorians. Additionally, "hierarchical confidence" emerged as a significant weakness of the system. Given that the Ecuadorian central bank's mismanagement of the national currency in the late 1990s led to the radical adoption of dollarization, how could citizens be reassured that the central bank would not engage in similar practices with *dinero electrónico*? The government's efforts to address these concerns were unconvincing. The argument that the central bank lacked money-creation powers under the *dinero electrónico* system and was merely substituting digital money for physical cash failed to assuage fears. Some critics speculated that the central bank might use deposited dollars to finance government expenditures. Political opponents of Correa seized on this argument to discredit *dinero electrónico*, further eroding public confidence.

The election of Lenín Moreno as President in 2017 marked the end of dinero electrónico and the broader attempts to introduce flexibility into the dollarization regime. The financial assistance agreement signed with the International Monetary Fund (IMF) and the World Bank in February 2019, along with Ecuador's sovereign debt default in 2021, reinforced the irreversibility of dollarization and the adoption of conservative economic reforms (Toscanini; Lapo Maza; Bustamante, 2020). The Dollarization Defense Law, passed in April 2021, solidified this policy by eliminating any possibility for the central bank to issue a CBDC or any other alternative currency. On May 24, 2021, Moreno handed over power to his successor, conservative banker Guillermo Lasso, whose administration's first major economic policy decision was to legislate the complete independence of the central bank. Since 2023, the Federal Reserve Bank of New York has granted the Central Bank of Ecuador (BCE) access to a liquidity facility for exclusive central banking operations. This instrument allows the BCE to access limited liquid resources in the event of liquidity needs, through securities repurchase operations. This agreement further reinforces Ecuador's asymmetrical monetary relationship with the United States and confirms the hierarchical structure of the current international monetary system (Murau; Pape; Pforr, 2023; Carneiro; De Conti, 2022; Fritz et al., 2018). Both countries share the US dollar, but this arrangement works as an "asymmetrical monetary union" (Ponsot, 2019).

CBDCs and digital payments in partially dollarized countries: Nigeria and Cambodia

Nigeria, Africa's largest economy, has long grappled with the issue of dollarization. The significant partial dollarization of Nigeria's economy results from various structural and macroeconomic factors. A key driver is the continuous depreciation of the naira, the domestic currency. Over the years, the naira has undergone multiple devaluations, primarily due to weak foreign exchange reserves, declining oil revenues, and capital flights. The volatile exchange rate has made the US dollar a safer alternative for businesses and consumers seeking to protect their wealth from currency depreciation. Nigeria has also faced high inflation rates, which have eroded the purchasing power of the naira. As a result, many Nigerians prefer to hold their savings in US dollars rather than naira to preserve their value. High inflation also influences pricing strategies⁶, with some businesses opting to set prices in dollars to maintain stable revenues. Furthermore, as a major oil exporter, Nigeria conducts much of its trade in US dollars (Edy-Ewoh 2019).

To mitigate this dependence on the USD, the Central Bank of Nigeria (CBN) launched the eNaira in October 2021, making Nigeria the first African country to introduce a central bank digital currency (CBDC). The eNaira's introduction was driven by several key objectives: (i) enhancing financial inclusion by offering banking services to the unbanked and underbanked populations, especially in rural areas where traditional banking infrastructure is limited; (ii) boosting the efficiency of the payment system by lowering transaction costs and providing a seamless, real-time payment option for businesses and individuals; (iii) strengthening monetary policy implementation; and (iv) reducing dollarization, as well as the increasing trend of cryptocurrency adoption since 2020.

Since its launch, the eNaira has experienced varying levels of adoption. By September 2024, the total value of transactions conducted through the eNaira reached N18.32 billion⁷, marking a 57%

⁽⁶⁾ The inflation rates in Nigeria were 13.2% in 2020, 16.9% in 2021, 18.9% in 2022, 24.7% in 2023, 34.8% in 2024.

⁽⁷⁾ Around US\$ 13 million (average exchange rate naira vs. US dollar in 2024).

increase from the previous year. Policies limiting U.S. dollar withdrawals and promoting the use of naira for local transactions have been reinforced. The government has actively promoted the eNaira through incentives and public awareness campaigns, with plans underway to integrate the eNaira into government payments, salary disbursements, and social benefits programs to enhance its usage. However, despite these efforts, the adoption rate of the eNaira remains relatively low compared to the broader financial system, with only 0.6% of cash in circulation being held in digital currency. The CBDC has yet to displace the USD.

Cambodia, on the other hand, remains one of the most dollarized economies in Asia. As of the end of 2024, foreign currency deposits accounted for 83.1% of broad money, up from 70% in 2005 (International Monetary Fund, 2025). While one might expect dollarization to decline as macroeconomic conditions improve, Cambodia defies this expectation. Paradoxically, and in contrast to Nigeria, the growing dollarization in Cambodia has occurred amidst greater macroeconomic and political stability. Inflation has remained low, averaging around 4%, while GDP growth has been robust, averaging approximately 7.7% annually over the past 20 years. Despite these favorable conditions, the reliance on the US dollar has not only persisted but, in some instances, intensified. The dominance of the dollar extends beyond everyday transactions; it is deeply embedded in the banking system, the real estate sector, and financial markets, with over 90% of transactions being conducted in US dollars.

In response to this entrenched dollarization, Cambodia has undertaken significant efforts to restore confidence in its national currency, the Riel (KHR). The country has adopted a long-term rerielization / de-dollarization strategy (Okuda; Chea, 2023; Chea; Ouk, 2024) aimed at stabilizing the exchange rate and fostering trust in the local currency: "De-dollarization is a long-term objective for Cambodia" (Coe et al. 2006). The authorities have worked to reduce dependence on the US dollar through a series of policies designed to strengthen the financial system and encourage the use of the local currency. These measures include the introduction of Negotiable Certificates of Deposit (NCDs) to provide Riel-denominated liquidity to financial institutions and adjustments to reserve requirements, making it more costly for banks to hold US dollar deposits (Duma 2011). In parallel, the government has implemented regulatory measures to normalize the use of the Riel, such as mandating the payment of taxes, public sector salaries, and utility bills in the local currency. Public awareness campaigns and financial literacy programs have also been launched to reinforce confidence in the Riel.

One of the most ambitious initiatives undertaken by the National Bank of Cambodia (NBC) to counter dollarization has been the launch of the Bakong digital payments system in October 2020. Often viewed as a type of CBDC, Bakong is a blockchain-based digital currency and payment platform designed to enhance financial inclusion, modernize the country's banking infrastructure, and reduce reliance on the US dollar. Bakong operates as a centralized digital payment system, allowing users to hold, transfer, and receive payments in both Cambodian Riel (KHR) and US dollars (USD) via a mobile app. It connects commercial banks, microfinance institutions (MFIs), and payment service providers, creating a unified financial ecosystem. Users can make transactions via QR codes, phone numbers, or account numbers for ease of use. Bakong offers fast, secure, and low-cost transactions while ensuring transparency and efficiency. It supports both domestic transactions and cross-border payments, particularly with Malaysia, Thailand, and China.

The NBC has strongly promoted Bakong as a means to encourage the use of the Cambodian Riel (KHR) by making it more convenient and efficient. These efforts have yielded some progress. The circulation of the Riel has grown at an annual rate of 18%, and Riel deposits have increased by 29% per year. However, despite these advances, dollarization remains persistently high, hovering around 80% since 2007. Although the introduction of Bakong has fostered some progress, it has not been sufficient to reduce the entrenched presence of the USD in Cambodia's economy.

When considering the concept of sovereignty in the Westphalian sense, the Cambodian authorities' strategy has not been entirely successful, as the US dollar remains widely used, including within the Bakong system. However, if we define monetary sovereignty as "the ability of States to use tools for monetary governance to achieve their economic policy objectives" (Murau; van 't Klooster, 2023), Cambodia's efforts may not be deemed a failure. According to this perspective, monetary governance involves controlling pure public money, regulating private-public money, and managing private money within the state's monetary jurisdiction. By controlling the Bakong system and private payment systems, as well as reforming the banking and microfinance sectors, the Cambodian authorities are striving to respond more effectively to their economic policy objectives and structural changes, rather than simply attempting to eradicate the use of the US dollar.

The next section discusses the case of China, where digitalization of currencies and payments may be seen as a potential vector for the internationalization of the renminbi.

4 CBDCs and digital payments as a vector for global de-dollarization? The e-RMB and the mBridge

In China, there is no sign of any risk of internal dollarization. The renminbi is the legal tender and reigns absolute in the domestic transactions. Operations (or bank accounts) in alien currencies are not allowed for the ordinary economic actors, and there are no evidences of a black market or relevant informal transactions using foreign currencies.

In the recent period however, Chinese monetary authorities started facing a challenge which is not related to the legal tender, but rather to the platforms that are used for daily payments. Currently, more than 90% of the payments occur through the platforms of two private companies, namely, Alipay and Wechat⁸. It demonstrates the high degree of digitalization of payments, but is also shows a high vulnerability of the Chinese economy to these two platforms – after all, if one of them has instabilities, it may create serious harms for economic activity. In addition, it allows these two companies to concentrate a realm of data related to the economic transactions of the Chinese population which may be extremely useful for market strategies, and which may be considered an invaluable source of power.

This duopoly in regard to the digital payments is taken by the literature as one of the main reasons why the People Bank of China (PBOC) started the development of a CBDC as early as in 2014. In 2016, a Digital Currency Institute was created at the PBOC, and right after a prototype of the e-CNY was launched. For the development of this digital currency the PBOC established alliances with public banks and private financial institutions (including Antgroup and Tencent, the controllers of respectively Alipay and Wechat). In 2019, pilot experiments were introduced in some cities. During

⁽⁸⁾ Data from Statista.

the 2022 Winter Olympic Games, the e-CNY digital wallet was launched, and since then the pilot experiments have been increasing. In 2022, the amount of e-CNY in circulation was RMB 13.6 billion (almost US\$ 2 billion), a very small share of the cash and reserves held by the PBOC (only 0.13%), but the biggest amount in the world of a CBDC already in circulation (PBOC, 2022).

Despite to reduce the dependency of the Chinese payment system on two private fintechs, and have direct access to the gigantic flow of information related to almost all economic operations carried over in the country are certainly core motivations for the development of the e-CNY, it is very clear that there are also external objectives. More specifically, it is becoming gradually more evident that the development of the e-CNY is also understood as a possible boost to the internationalization of the Chinese currency (Boaventura et al, 2023; Ponsot; Berthou, 2025). Hence, if the digital renminbi is not aimed at fostering the de-dollarization of the national economy (as in the case of Cambodia, Ecuador and Nigeria, discussed in section 3), it is undoubtfully connected to the effort of de-dollarization of the global economy.

This becomes very clear when we broaden the scope of the investigation, analyzing not only the e-CNY in itself, but also the effort of the Chinese government to create a platform for cross-border payments in digital currencies. In fact, in parallel to the creation of CBDCs, monetary authorities of several countries and the Bank for International Settlements (BIS) are involved in diverse projects which try to study the viability – and the benefits – of these new platforms (e.g. Mariana Project, Dunbar Project). The ambition of such projects is creating a system which allows for "faster, cheaper and more transparent" transactions (BIS, 2021). The PBOC is deeply involved in a project which is aimed at the establishment of a platform that complies with this need for "faster, cheaper and more transparent" transactions, but that tries also to foment international payments in multiple CBDCs.

This project, named as mBridge, was launched in 2021 by the PBOC, together with the monetary authorities of Hong Kong, Thailand, and the United Arab Emirates, and the BIS. In 2024, the Central Bank of Saudi Arabia also joined the group. In 2024, the BIS withdrew from the project, under the allegation that it reached the status of a "minimum viable project", so it can be pursued by the national monetary authorities alone. Yet, several analysts indicate that this move was probably due to the perception of the BIS that the mBridge could be used by China for geopolitical reasons related to battle against the dollar hegemony. While insisting that the withdrawal of the BIS was related to the maturity of the project, Carstens declared that "We need to be observant of sanctions and whatever products we put together should not be a conduit to violate any of these sanctions" (Reuters, 2024).

It is indeed unequivocal that the mBridge project has the aspiration of reducing the need of the US dollar as a vehicle currency. The main effort is precisely to create the possibility for the partner countries to directly exchange their national currencies. Very interestingly, there is even a legal prohibition for the usage of currencies which are not those of the countries involved in the initiative. As stated in its official report (BIS, 2022b, p. 32), the project does not allow

Cross-border transactions using a currency which is foreign to both counterparties: despite the prevalence of this in international trade, it raises similar concerns about displacing local currencies. This challenge is particularly salient for EMDEs [emerging markets and developing economies].

It means therefore that at least in this stage of the development process, transactions using the US dollar are simply not allowed. It is therefore in principle a platform that foments dedollarization "by design".

With the withdrawal of the BIS, the mBridge became the only relevant project for cross-border payment systems that involves only Global South countries as full members. In addition, there are 25 observers, both from the Global South and North⁹. Curiously, the Federal Reserve Bank of New York is one of the observers, demonstrating that even if the US monetary authorities are not developing a digital dollar, there was a preoccupation to acquire an expertise in the topic ¹⁰ (Belotti, 2025). Yet, if the project moves more explicitly into the direction of becoming a geopolitical tool for de-dollarization, the participation of the Fed as an observer may be called into question. Out of the countries discussed in section 3, Cambodia is also an observer at the mBridge. Similarly to the USA, the National Bank of Cambodia is still not developing a CBDC, but it also realizes the relevance of following the discussions and advancements in this matter. The mBridge project is making an explicit effort to attract new observer members, and a call was opened with this purpose.

Hence, it is very evident that: i) the e-CNY is conceived as a tool for the internationalization of the renminbi; ii) the mBridge is aimed at reducing the dependency on the US dollar. The important question now if these initiatives are successful. Since both initiatives are in a development phase, it is still not possible to analyze concrete results. Yet, several considerations may be raised about it.

Starting with the e-RMB, the very first issue to be considered is that the status of a currency at the IMFS is not (and will not) be defined by the format of such currency or the technology which is embedded. Rather, it depends on intertwined geoeconomic and geopolitical aspects¹¹, such as the economic size of the issuing country, its geopolitical power and the role of its financial market for the global economy (De Conti, 2011). Hence, the mere transformation of the renminbi into a digital currency will not, in itself, allow the Chinese currency to improve its status. Having that in mind, the crucial thing to consider when analyzing this process is that these technological transformations in the form of money are happening in a moment in which there are also important transformations in the role of China for the world economy and – relatedly – the geopolitical power of this country. Hence, the "background" elements which define the internationalization of a currency are also in motion, favoring a strengthening of the relevance of the renminbi for the globe.

Actually, even before the appearance of the e-CNY, the renminbi is already increasing its global relevance. Since 2009 – and as a response to the instabilities provoked by the subprime crisis

⁽⁹⁾ Currently, the observing members of Project mBridge are the Asian Infrastructure Investment Bank; Bangko Sentral ng Pilipinas; Bank Indonesia; Bank of France; Bank of Israel; Bank of Italy; Bank of Korea; Bank of Mauritius; Bank of Namibia; Central Bank of Bahrain; Central Bank of Brazil; Central Bank of Chile; Central Bank of Egypt; Central Bank of Jordan; Central Bank of Luxembourg; Central Bank of Malaysia; Central Bank of Nepal; Central Bank of Norway; Central Bank of the Republic of Türkiye; European Central Bank; International Monetary Fund; Magyar Nemzeti Bank; Monetary Authority of Macao; National Bank of Cambodia; National Bank of Georgia; National Bank of Kazakhstan; New York Innovation Centre, Federal Reserve Bank of New York; Reserve Bank of Australia; Reserve Bank of India; South African Reserve Bank; and World Bank.

⁽¹⁰⁾ It has completely change with Trump. In the fourth day of his new mandate (Jan. 23rd, 2025), Trump published a White House Order forbidding US monetary authority to develop research on the digital dollar. Still, the Fed has not yet renounced to its position as obverse of the mBridge project.

⁽¹¹⁾ Economic and political power are completely interrelated, and references to both dimensions are only aimed at highlighting this interdependence.

-, the Chinese government has been implementing several policies aimed at fomenting the cross-border usage of the renminbi (Ponsot; Berthou, 2025). As a consequence, all available data reveal this increasing importance. For the Chinese international trade, settlements in renminbi were forbidden until 2012, and in 2023 they are 26.2% for goods, and 30.3% for services. Globally, the share of the renminbi in the total operations of the global foreign exchange markets has jumped from 0% in 2007 to 7% in 2022; for the payments in the SWIFT platform, it occupies currently the fourth position, with 4.5%. Yet, these same data reveal the obstacles faced by the renminbi to change its status, because it is increasingly used for payments, but still barely used as a reserve currency. For the total international reserves, the share of the renminbi is 2.2% in March 2024. It shows therefore that even if the renminbi is giving firm steps in its internationalization process, it is still not threatening the role of the US dollar as the global anchor of the financial wealth (Carneiro; De Conti, 2022). The safe haven of the global economy is still provided by the triad US dollar/US treasuries/US financial market, and it is very unlikely that the e-RMB can dismantle it.

But this analysis has to be complemented by the possibilities of a new boost in the international usage of the renminbi (or the e-RMB) through the new payment systems. As for the mBridge, the initial results of the project are very promising, as it managed to perform instant payments in the central bank currency, reducing – or even eliminating – the settlement risk. The big question is therefore if it can indeed foster payments in multiple currencies, reducing the need for USD. Mayer (2024) suggests that these new systems – and especially the mBridge – can indeed facilitate payments in diverse currencies, because they reduce the network effects related to the usage of the US dollar. Yet, there are both political and technical aspects which are important to discuss.

First, the possibility of fostering de-dollarization depends obviously on the network of partners that will be involved in mBridge. In this regard, the withdrawal of the BIS can have conflicting effects. After all, the polemics related to the possible geopolitical use of this system by China may drive off some countries – especially those with close relations with the USA. At the same time however, it may give more room for China to attract Global South countries and indeed use mBridge as a platform aimed at the de-dollarization of the world economy. In this scenario, economic transactions with the Global North would be still done in US dollars (or euros), but it could potentially enable the configuration of a system in which transactions intra-Global South would be done in the national currencies (with a possible dominance of the renminbi).

But then, some operational aspects of the system have to be also taken into consideration. On one hand, circumventing the need to use the US dollar as a vehicle currency allows for a reduction of the transaction costs involved in cross-border operations; on the other hand, the direct exchange of national currencies other than the US dollar are currently done with exchange rates which are usually very onerous (because of the high spread that the financial institutions charge on currencies which have low liquidity in the international markets). The success of the endeavor depends therefore on the enablement of a system which allows for the direct exchange of diverse currencies with reasonable exchange rates. To address this need, the mBridge platform facilitates "automatically matched PvP [payment *versus* payment] transactions at the best available FX Board Rate, ensuring execution at the agreed rate" (Schumacher, 2024, p. 332). This eliminates exchange rate risk by allowing FX transactions to be executed at the pre-agreed rate through a Request for Quote (RFQ) mechanism. In the event of liquidity issues, a queuing system is used to manage operations during periods of low liquidity. Additionally, Central Banks can periodically provide the required liquidity through an

automated Liquidity Saving Mechanism (LSM). It is still not clear however if this design will create a solution to liquidity problems on a permanent basis, and – very importantly – for the definition of exchange rates which are not prohibitive.

Summing up, the advent of the CBDCs do not change the essence of the national currencies. Hence, the mere onset of the e-CNY is not enough to unsettle the position of the US dollar as the key-currency of the world economy¹². Yet, this perception may not overshadow some ongoing movements at IMFS, and some possibilities for the future. For the short run, the e-CNY conjugated to the emergence of the mBridge – and its potential enlargement, including other Global South countries – may reduce the use of the US dollar as a vehicle currency. At least in the short-run, this heightened usage of national currencies (and especially of the e-CNY) will be probably limited to payment flows, and not to stocks of wealth – Ponsot; Berthou (2025, p. 224) refer to the renminbi at the international level as a "payment money". In addition, these operations will be probably restricted to certain countries of the Global South. These are certainly important limitations, but in light of the strong inertia which characterizes the IMFS, they are non-negligible movements.

For the long run, one aspect should be considered. The arrival of the CBDCs and the new cross-border payment systems is giving start to a race aimed at the establishment of new standards. First of all, there are distinct modalities of technologies that may be used for the creation of digital currencies (e.g. blockchain), and each country is choosing and/or developing the technologic basis of its CBDC. For the construction of the new international payment systems, the search for interoperability may give rise to a stimulus of certain countries to follow technological standards defined by leader countries. Second, a new regulatory framework will have to be erected, both at the national and at the international level, to cope with the novelties brought by CBDCs and the new cross-border payment systems. Since there is no supranational body entitled to lead this process, it is not unlikely that a dispute between powerful countries may arise. After all, history shows that both technological and regulatory standards are not simply defined by technical advantages over competing possibilities, but are rather the result of (geo)political struggles. In all this reasoning, it is important to highlight that, among the triad of the biggest economies of the world, China is in the avant-garde in the process of creation of its own CBDC, the eurozone is in an intermediate position (the digital euro is under development), and the USA is lagging behind (as soon as in the fourth day of his second term – January 23rd, 2025 –, Donald Trump released an official order forbidding any project related to the creation of a digital dollar). If China manages to take benefit of this pioneering position in this race for the settlement of the new standards, it may serve as a vector to boost the international usage of the Chinese currency.

5 Final remarks and policy recommendations

Digitalization is an unambiguous process, with deep impacts in the world economy and society. In the sphere of money and payments, the process is also uncontestable, and it leads to relevant transformations. On one hand, it brings about very positive consequences for the general public, such as the enablement of faster and cheaper transfers of money. On the other hand, it brings

¹² In fact, the Chinese government is very clear in the statement that it does not want the renminbi to replace the dollar as the key-currency of the global economy. Rather, it defends a stronger usage of the renminbi at the international level, giving inception to a more diversified IMFS, less dependent on the US dollar.

preoccupations for the monetary authorities, for instance because of a higher risk of financial instability. Amidst this challenging scenario, Central Banks all over the world have been very active in designing policies aimed at coping with the potential risks, and exploring the potential benefits of this digital conversion. In particular, many countries in the world are developing a CBDC.

One of the main ideas behind the development of CBDCs is that the provision of (central bank) digital cash may discourage the usage of private cyber assets (such as bitcoin or the stablecoins), which may provoke financial instability. In addition to that, some countries perceive that CBDCs and/or state controlled digital payment systems may be important tools in the effort of dedollarization. Yet, history shows that the IMFS is very resilient, so there is a possible gap between the potentialities brought by digitalization, and the concrete effects over de-dollarization. This article was therefore aimed at analyzing if a state-led digitalization of currencies and payments may be effectively helpful to the endeavor of de-dollarization, both at the national and at the global levels. With that purpose, we analyzed the concrete experiences of Ecuador (dinero electrónico), Nigeria (e-naira), Cambodia (Bakong payment system) and China (e-CNY and mBridge system).

Our investigation showed that the creation of a CBDC is not in itself a silver bullet for the de-dollarization, be it at the national or at the global level. As discussed by the institutionalist theory of money (e.g. Aglietta et al, 2018), trust is a crucial issue and the mere transformation in the format of money will not stimulate the usage of a currency if actors do not trust it.

The experiences of Ecuador and Nigeria exposed in a very clear manner that when the US dollar becomes a relevant (or the dominant) currency circulating in a country, it is extremely hard to give a step back to either reestablish a national currency (in the case of Ecuador) or foment the usage of the national currency (in the case of Nigeria). In spite of all actions carried over by both monetary authorities (e.g. massive campaigns), citizens of both countries have been/are reluctant in using the national currency because of the abovementioned lack of trust. This is related to a memory of high inflation in the national currency, and a perceived misuse of the seigniorage power by the national authorities in the past, but also – and crucially – to the simple (and very logic) awareness that money is useful if this is accepted by third parties, so it may be risky to start using a money if it is still not massively used by the rest of the population. This conventional character of money is very strong, and conventions usually take long time to change. In the case of Ecuador, it is also important to highlight that both private banks and the political opposition to the then president Rafael Correa played a role in creating an environment of distrust in the new currency. Under these circumstances, not even the benefits provided by the Ecuadorian government to the users of the dinero electrónico were enough to encourage its use. Obviously, the political twist that took over the country was the determinant factor for the precocious abolition of the experiment. Nevertheless, there are no relevant signs so far that the mere continuity of the process in Nigeria may be conducive to an increase in the use of the e-naira. In the case of China, an analogous reasoning is valid. Even if the renminbi enjoys of total trust within China, at the global level it is still not seem as store of value comparable to the US dollar. Hence, the mere creation of a digital renminbi will not in itself concur to a relevant process of de-dollarization.

Yet, the experiences of Cambodia and China, although very different in terms of the status of their national currencies, and the motivations of the policies, are enlightening of additional measures

that may help in the effort of increasing monetary sovereignty. Interestingly, these complementary policies are not directly related to currencies, but to the payment systems.

In Cambodia, the creation of the Bakong payment system has been also not successful in the objective of de-dollarization. Nonetheless, it may be understood as a means to strengthen monetary sovereignty in the sense proposed by Murrau and van 't Klooster (2023), because it provides a new tool for monetary governance. The big paradox however is that the Bakong system is being more and more used because it allows for payments in both currencies (US dollar and Cambodian rial). Hence, the design permitting the use of the US dollar provides a good appeal for the utilization of the platform, but at the same time it curbs its potential to foster the use of the rial.

It leads us to the conclusion that dollarized countries willing to pursue de-dollarization policies should use a strategy which combines the eventual creation of a digital currency with a strong attention to the design of digital payment systems which aim at strengthening the "money governance" in a broader sense. In addition, it shows us that new digital payment systems allowing the utilization of both the US dollar and the national currencies (either a CBDC or the conventional currency) tend to be more easily accepted by the citizens. A possible strategy in countries with high degree of dollarization (or fully dollarized) may be therefore to implement such bi-currency platforms to promote an ample dissemination of this new digital tool, and once it becomes widely used, the monetary authorities should start providing strong benefits for a gradual incrementation in the usage of the national currency – and maybe restrictions to the usage of the US dollar. This strategy may be suitable only for countries which already have a high degree of dollarization (or full dollarization). Otherwise, they can have the contrary result, fomenting a replacement of the national currency by the US dollar for domestic transactions. There is obviously no guarantee that the trust in the platform will convert into a higher trust in the digital currency, but it may be part of a combination of actions concurring to the purpose of fomenting the acceptability of the national currency.

The Chinese case corroborates that the mere conversion of currencies into a digital form will not in itself provoke de-dollarization – in this case, at the global level –, or any substantial changes in the positions of currencies in the IMFS. Yet, when this is combined with the erection of a new infrastructure for cross-border payments, it may be supportive to a greater utilization of such currency(ies) at the international level. Given its successful performance in the tests that have been conducted so far (BIS, 2023), the mBridge appears as a strong candidate for a system which may foment the usage of diverse national currencies. It will obviously depend on the network of participating countries, in the solution to technical problems (e.g. to enable FX operation between two peripheral currencies with reasonable exchange rates), and to the ability of participating countries to face the reactions that will very likely come from the USA, but we agree with Mayer (2024) that these new systems – and especially the mBridge – can indeed facilitate payments in diverse currencies, because they reduce the network effects related to the usage of the US dollar.

Having in mind that the USA is neither developing a CBDC, nor taking part in supranational projects for the establishment of CBDC cross-border payment systems, the success of the mBridge increases the possibility of a scenario in which payments among the participating countries may be (at least partly) carried over in the national currencies. As discussed above, it does not mean that dollar hegemony will come to an end in the near future – since it is based in structural factors, such as the geopolitical power of the USA and the role of the US capital market for the world economy –,

but it may give rise to an augmentation in the cross-border usage of other national currencies, especially for the payment of international trade. In this sense, we would strongly recommend countries of the Global South to take part in joint-initiatives for the creation of these new CBDCs cross-border payment systems, with special attention to the possibility of using their own currencies for international transactions. Since these systems are under development, it is a crucial moment for the determination of standards. In particular, in adhering to the mBridge initiative, Global South countries may join forces to create a system which has a horizontal governance, acting in favor of dedollarization and a less asymmetric IMFS.

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