

How will digital technologies influence the international monetary system?

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Abstract

New and evolving financial technologies, including the advent of cryptocurrencies and central bank digital currencies (CBDCs), will make cross-border payments cheaper and quicker. However, reduced frictions in global capital flows could also result in more capital flow and exchange rate volatility, which is of particular concern for emerging market economies. There will be greater competition among fiat currencies and certain private currencies such as stablecoins in their roles as mediums of exchange for payment and settlement of domestic as well as cross-border transactions. However, neither the advent of CBDCs nor the lowering of barriers to international financial flows will do much on their own to reorder the international monetary system or the balance of power among major currencies. Currencies such as the US dollar that are dominant stores of value will remain so because that dominance rests not just on the issuing country's economic size and financial market depth, but also on a strong institutional foundation that is essential for maintaining investors' trust in a currency.

Keywords: central bank digital currency, cryptocurrencies, Bitcoin, stablecoins, cross-border payments, international monetary system, medium of exchange, store of value

JEL classification: E4, E5, E61

I. Introduction

New forms of money and new channels for moving funds within and between economies could have implications for international capital flows, exchange rates, and the structure of the international monetary system. Innovative financial technologies have the potential to mitigate the substantial frictions that now cloud cross-border financial transactions. Some of the complications, especially the involvement of multiple currencies, cannot be eliminated by new technologies but improvements in the speed, transparency, and costs of such transactions can help reduce the impact of these frictions. These changes will be a boon to exporters and importers, migrants sending remittances back to their home countries, investors looking for international diversification opportunities for their savings, and firms looking to raise capital.

The proliferation of channels for cross-border capital flows that are generating these benefits will also, however, make it increasingly difficult for national authorities to control these flows. Emerging-market economies (EMEs) will face particular challenges in managing the volatility of capital flows and exchange rates. These economies are often subject to the whiplash effects of the whims of foreign investors. Surges in capital inflows can lead to higher inflation and rising exchange rates, which tend to destroy the competitiveness of their exports in foreign markets. When a country loses favour with investors, it can lose access to foreign funds and face a debilitating plunge in the value of its currency. Investor sentiments tend to be influenced not just by what is happening in emerging markets' economies themselves but also by interest rates in the United States and other major advanced economies. New channels for capital flows into and out of emerging markets will exacerbate such volatility and expose these economies to more significant spillovers from the monetary policy actions of the world's major central banks.

Neither the advent of central bank digital currencies (CBDCs) nor the lowering of barriers to international financial flows will do much on their own to reorder the international monetary system or the balance of power among major currencies. Currencies such as the US dollar that are dominant stores of value will remain so because that dominance rests not just on the issuing country's economic size and financial market depth, but also on a strong institutional foundation that is essential for maintaining investors' trust in a currency. For all its flaws, the US institutional framework—including a trusted and independent central bank, an independent judiciary that maintains the rule of law, and a system of checks and balances that restrains the unbridled power of any branch of government—has stood the test of time. While the dollar's dominance as a payment currency might erode, it will remain the dominant global safe haven currency for a long time to come.

II. International payments

The transfer of funds across institutions globally is now intermediated through SWIFT, the Society for Worldwide Interbank Financial Telecommunication. SWIFT does not actually transfer funds; rather, it provides a financial messaging service that connects more than 11,000 financial institutions in virtually every country in the world through a common messaging protocol. Before SWIFT was founded in 1973, messages initiating international payments were sent as full sentences through Telex, posing security risks and creating room for human error at both ends of a transaction. The main components of the original SWIFT services included a messaging platform, a computer system to validate and route messages, and a set of message standards. The standards allowed for the automated transmission of messages, unfettered by differences in languages or computer systems across countries. These elements, in updated forms, remain the crux of SWIFT's operations.

SWIFT now faces competition from alternative international payment messaging systems that offer similar services at a lower cost (Qiu *et al.*, 2019). SWIFT's major advantage over potential competitors is that it has become a widely accepted and trusted protocol, but this might not be a durable business model. Indeed, many countries, such as China and Russia, are setting up their own payment systems to reduce their reliance on foreign ones and in the process opening a gateway to a new international payment system. In other words, such countries could conceivably link their individual payment systems, routing bilateral international transactions through these rather than relying on SWIFT and the institutions that use it for messaging.

SWIFT is subject to political as well as technological risks, adding momentum to the search for alternatives. The United States has used the threat of punitive actions against SWIFT officials and banks represented on its board of directors to force the organization to stop providing a service to central banks and financial institutions in countries that are subject to US financial sanctions (Katzenstein, 2015; Zoffer, 2019). In turn, the threat of losing access to SWIFT is a powerful one, as it would impose a huge economic cost on countries by cutting them off from the international financial system and hindering their trade.

SWIFT faces technical challenges as well. The system passes payments through a number of nodes, slowing down the transaction process. Cryptocurrencies and other payment systems that use distributed ledger technologies (DLTs) might bypass the need for routing through multiple nodes. Moreover, vexed by the system's vulnerability to US pressure, many central banks, including the European Central Bank, have been studying the potential for expanding the interoperability of digital currencies for cross-border trade. The central banks of Canada, Singapore, Hong Kong, and Thailand are also exploring new initiatives to process cross-border transactions independently of SWIFT.

The international payment messaging system is almost certainly an area ripe for disruptive evolution. For all its advantages, expansive reach, and attempts to innovate to stay ahead of the competition, SWIFT remains vulnerable to shifting political and technological winds. In fact, the very need for such common messaging protocols might be obviated by new financial technologies. As one example, the Interbank Information Network, a blockchain-based messaging and payment system being developed by a consortium of banks led by J. P. Morgan Chase, might altogether eliminate the need for SWIFT. This peer-to-peer network runs on Quorum, a permissioned variant of the Ethereum blockchain, and has attracted more than 400 participating banks across the world. More importantly, there are government-backed initiatives under way to create payment systems that could end up side-lining SWIFT.

A number of countries, even those not directly affected by US sanctions, have begun developing alternatives to SWIFT and international payment systems that rely on its messaging services. For instance, China's Cross-border Interbank Payment System (CIPS), which commenced operations in 2015, offers clearing and settlement services for cross-border payments in renminbi. CIPS has the capacity to easily integrate with other national payment systems. This could help in promoting the international use of the renminbi by making it easier to use the currency for

cross-border payments. CIPS currently uses SWIFT as its main messaging channel but it could eventually serve as a more comprehensive system that includes messaging services using an alternative protocol. CIPS has adopted the latest internationally accepted message standard (ISO 20022) and also allows messages to be transmitted in either Chinese or English, with a standardization system that facilitates easy translations between the two.

To sum up, new financial technologies are likely to hasten the disruption of existing international messaging and payment systems (Bech *et al.*, 2020). The days of SWIFT's uncontested dominance of international payment messaging are numbered, which could have knock-on effects on the dollar's dominance of international payments. Admittedly, though, the ability of new payment messaging systems to ensure security and to be scaled up to handle large volumes while staying on the right side of domestic and international regulations, is not yet assured and could take some years to come to fruition.

III. Vehicle currencies and exchange rates

Such 'vehicle currencies' as the US dollar play an important role in international trade as they serve as widely accepted units of account for denominating trade and financial transactions and as mediums of exchange for making payments to settle those transactions (Goldberg and Tille, 2008). The US dollar is the dominant vehicle currency, with a few others such as the euro, the British pound sterling, and the Japanese yen also playing this role.

As EMEs grow larger and as their financial markets develop, the costs of trading their currencies for other emerging market currencies is likely to decline. New financial technologies that make international payments quicker and easier to track will also play a role. Risks arising from exchange rate volatility are mitigated if a payment for a trade transaction can be settled instantaneously rather than over a matter of days, which is typically the case now. A longer-term and perhaps less likely outcome is the emergence of cryptocurrencies, or at least decentralized payment systems, that function as mediums of exchange in international transactions. These forces, to varying extents, will diminish reliance on vehicle currencies.

As the role of vehicle currencies declines, many more bilateral exchange rates will become consequential for cross-border transactions, including exchange rates between EME currencies. Financial markets do provide instruments for hedging foreign exchange risk, but these are expensive. Changes in international payment systems that allow for faster payment and settlement will reduce the horizons over which it is necessary to hedge against exchange rate movements. For trade in many products, where contracts are negotiated weeks or months in advance, these changes will amount to only a modest change in the horizon of hedging needs. For other types of financial transactions that have shorter horizons, there could be material decreases in hedging requirements and the associated costs. In some cases, instantaneous payment and settlement of transactions can remove the risks to revenues from short-term exchange rate volatility even without involving the costs of hedging.

What if one day it was possible to use a cryptocurrency such as Bitcoin or a private stablecoin for denominating and settling cross-border transactions? In that event, the only exchange rates that would matter would be those between domestic currencies and the relevant cryptocurrency. If the same cryptocurrency could be used both within and across countries, even that exchange rate might have less relevance. These are fanciful but unlikely outcomes, given the volatility of unbacked cryptocurrencies' values and the likelihood that CBDC and official stablecoins will compete with each other only as mediums of exchange, with their values tightly linked to one another.

For the foreseeable future, exchange rates for each country's currency relative to those of its trading partners as well as major currencies that serve as units of account and mediums of exchange will remain important in the functioning of the international monetary system. In short, while new financial technologies could over time influence the relative importance of various currencies in the denomination and settlement of cross-border transactions, the basic mechanics of foreign exchange markets are unlikely to be altered significantly.

IV. A global market for financial capital

Fintech (a portmanteau term for novel financial technologies) is unlikely to change the fundamental drivers of global capital flows but, by reducing explicit and covert barriers to such flows, it could influence the allocation of global capital. This could eventually set off a new wave of financial globalization, which—even if it did not mean a return to the same scale of cross-border flows as in their recent heyday—could generate a number of benefits.

The new financial technologies might make access to worldwide capital available to small and medium-sized firms as well, through more direct and less expensive channels. Fintech firms could in principle help foreign investors assess risk better and also create channels for directly investing in productive firms, bypassing creaky domestic financial systems.

Significant changes are in store for retail investors as well. Fintech firms might eventually make it possible for retail investors to allocate part of their portfolios to stock markets around the world at a low cost. In many advanced countries, one can already do this simply by buying shares in a mutual fund that invests abroad. Such funds typically charge higher fees than funds that might invest in domestic stocks and bonds. New investment platforms are likely to reduce costs, forcing even existing investment management firms to charge lower fees.

Fintech firms are reducing the costs of both obtaining information about foreign markets and investing in those markets. Moreover, new investment opportunities are also being opened up by technologies that allow for more efficient pooling of small individual savings accounts into larger pools that can be deployed more effectively.

One of the next frontiers in the Fintech evolution is likely to be the intermediation of capital flows at the retail level, enabling less wealthy households and smaller firms in both rich and poor economies to more easily gain access to global financial markets. Diversifying one's portfolio should become easier as stock markets around the world open up to foreign investors and as the costs of transacting across national boundaries fall.

Greater financial integration offers many benefits, but these potential benefits come at a price, especially for smaller and less developed economies. This group is particularly vulnerable to the whiplash effects of volatile capital flows, with this volatility caused in part by monetary policy actions of the major advanced economies (Rey, 2018; Clark *et al.*, 2019). New and relatively friction-free channels for cross-border financial flows could exacerbate these 'spillover' effects across economies. These new channels could not only amplify financial market volatility but also transmit it more rapidly across countries. In other words, the availability of more efficient conduits for cross-border capital flows could intensify global financial cycles and all the domestic policy complications that result from them.

De jure capital account restrictions have become increasingly porous under greater pressures for capital to flow across national borders, in search of either or both yield and safety, and also as financial institutions continue to expand their global footprint. This has led to rising *de facto* financial openness in all economies, including EMEs such as China and India that maintain *de jure* capital controls. In the case of China, for instance, its large banks now have a global presence and provide channels for moving money into and out of the country more easily than when these banks' operations were primarily domestic.

Developments in financial markets and new technologies now threaten to undermine whatever capital controls remain in place. While governments around the world try to limit the use of cryptocurrencies to circumvent capital controls or for more nefarious purposes, it is unclear if and for how long such measures will remain effective in the face of strong economic incentives for capital flows (Ju *et al.*, 2016; Pieters, 2017). For instance, despite China's crackdown on Bitcoin trading, one research firm estimated that nearly \$50 billion worth of cryptocurrency moved from China-based digital addresses to overseas addresses between July 2019 and June 2020, with at least some portion of these flows representing capital flight.

It is clear that both official and private channels for cross-border capital flows are expanding. Official channels—such as the cross-border payment system on which the central banks of Canada, Singapore, and the United Kingdom have been collaborating—will make such flows easier while allowing governments to modulate these flows and reduce the risk of illegitimate financial activity. Private channels, on the other hand, could become increasingly difficult to monitor and manage, especially if they are created and used by informal financial institutions that will be harder to regulate.

The existence of a privately issued stablecoin that is recognized and accepted worldwide would also affect governments' ability to control capital flows across their borders. If money can be moved electronically, without going through any financial institutions regulated by a nation's regulatory agencies, it becomes difficult for that government to control inflows and outflows of financial capital in any meaningful way.

V. Competing fiat currencies

The US dollar is by far the dominant international currency in all respects—as a unit of account, medium of exchange, and store of value (see Goldberg, 2010; Eichengreen, 2011; Prasad, 2014; Chitu *et al.*, 2017; Gopinath and Stein, 2018; Prasad, 2019; Arslanalp *et al.*, 2022). A great deal of international trade, including virtually all international contracts for commodities such as oil, is denominated in dollars, far more than in any other currency. Thus, it is the main invoicing currency (Gopinath, 2016). As noted earlier, the dollar is the leading payment currency as well—by some measures, about 40 per cent of international payments are settled in dollars. The dollar is also the principal global reserve currency—more than 60 per cent of foreign exchange reserves held by the world's

central banks are held in dollar-denominated assets. When firms or governments in developing countries borrow in foreign currencies, usually because foreign investors lack confidence in the value of those countries' domestic currencies, they tend to do so in dollars.

The dollar's overwhelming dominance, and the absence of any serious competition that might undermine this dominance, gives the United States outsize influence. In 1960, the United States accounted for about 40 per cent of global GDP (at market exchange rates). By 2000, this share was down to 30 per cent. In the two decades since then, as China, India, and other emerging markets have made enormous strides, this share has fallen further to 24 per cent. The dollar's role in global finance and, with it, US influence on global financial markets, is far greater than its weight in the global economy.

The dollar's status as the principal global reserve currency means that the United States is able to borrow money at low interest rates from the rest of the world to finance its current account deficits. The dollar's dominance also gives the United States a powerful geopolitical tool that it does not hesitate to wield against its rivals. The dollar-centric global financial system gives US financial sanctions particular bite since they end up affecting any country or firm that has dealings of one sort or another with a US-based financial institution or that has even a secondary relationship with such institutions.

The demand for Bitcoin as a store of value rather than as a medium of exchange has stoked discussion about whether such cryptocurrencies could challenge that role of traditional reserve currencies. It is more likely that, as the underlying technologies become more stable and as better verification mechanisms are developed, such decentralized non-official cryptocurrencies will start playing a bigger role as mediums of exchange. Even that proposition is a tenuous one, given the high levels of price volatility experienced by such currencies recently. Nevertheless, this shift could occur over time as the payment functions of cryptocurrencies take precedence over speculative interest in them, especially if private stablecoins gain more traction.

The decline in transaction costs and easier settlement of transactions across currency pairs could have a more direct and immediate impact—a decline in the role of the US dollar as a vehicle currency, as previous discussed. There are other changes in prospect as well. The dollar's role as a unit of account is also subject to erosion. It is hardly a stretch to conceive of the denomination and settlement of contracts for oil and other commodities in other currencies, perhaps even emerging market currencies such as the renminbi. Indeed, China's purchases of oil from Saudi Arabia are reportedly now being increasingly contracted for and settled in renminbi. China has begun issuing yuan-denominated oil futures, as a way of shifting more of the financial transactions related to oil purchases and sales, including in derivatives markets, away from the dollar. Such developments are important but should be kept in proper perspective. While the very existence of yuan-denominated oil derivative contracts is a noteworthy development, this is a far cry from such contracts' playing a major role or in any significant way displacing dollar-denominated contracts.

Notwithstanding any such changes, the role of reserve currencies as stores of value is unlikely to be affected. Safe financial assets—assets that are perceived as maintaining most of their principal value even in times of extreme national or global financial stress—have many attributes that cannot be matched by non-official cryptocurrencies.

For an aspiring safe haven currency, depth and liquidity in the relevant financial instruments denominated in that currency are indispensable. More importantly, both domestic and foreign investors tend to place their trust in such currencies during financial crises since they are backed by a powerful institutional framework. The elements of such a framework include an institutionalized system of checks and balances, the rule of law, and a trusted central bank (Prasad, 2014). These elements provide a security blanket to investors, assuring them that the value of those investments will be largely protected and that investors, both domestic and foreign, will be treated fairly. The US institutional framework has eroded in recent years, but there is no rival that can match the combination of US institutional, economic, and financial strength that underpins the dollar's dominance.

While reserve currencies might not be challenged as stores of value, digital versions of extant reserve currencies and improved cross-border transaction channels could intensify competition between reserve currencies themselves. In short, the finance-related technological developments that are under way or on the horizon portend some changes in domestic and international financial markets, but a revolution in the international monetary system is not quite on the cards for the foreseeable future.

VI. New safe havens

Stablecoin initiatives built on top of service platforms that have extensive international reach could indeed make domestic and cross-border payments, at least between individuals and small businesses, relatively seamless (Cœuré, 2019)

Thus, competition between international currencies, both new and old, could become more heated and dynamic in the future, with the advantages of incumbency no longer as powerful as they once were (Brunnermeier *et al.*, 2019).

Given the extensive frictions in international payments, it is certainly a plausible proposition that stablecoins could gain traction as mediums of exchange that supplement, but do not supplant, existing payment currencies. However, the dollar is least likely to be hurt by such competition. A more likely outcome is that alternative payment systems erode the shares of currencies such as the euro, the British pound sterling, and the Japanese yen, while leaving the dollar largely unscathed. After all, stablecoins pegged to the dollar would simply make it easier to gain access to the world's most dominant currency.

Moreover, it is unlikely that such stablecoins would represent alternative stores of value. Indeed, the allure of stablecoins is precisely that their value is tightly linked to existing reserve currencies in which savers and investors around the world are willing to place their trust. In short, the emergence of stablecoins linked to existing reserve currencies will reduce direct demand for those currencies for international payments but will not in any fundamental way transform the relative balance of power among the major reserve currencies.

At the August 2019 Jackson Hole conference, Mark Carney, then the Governor of the Bank of England, gave a luncheon speech that spanned a broad expanse of policy issues (Carney, 2019). Carney proposed the creation of a synthetic hegemonic currency (SHC) that would be 'provided by the public sector, perhaps through a network of central bank digital currencies'. He depicted the SHC as taking the form of an invoicing and payment currency whose widespread use could eventually lead central banks, investors, and financial market participants to perceive the currencies that comprised its basket as reliable reserve assets, thereby displacing the dollar's dominance in international trade and finance, including in credit markets. To achieve this objective, the basket would presumably tilt away from a large weight on the dollar.

For all of the intentions to break free of the dollar and the consensus over problems caused by a unipolar international monetary system, however, the viability of an SHC is likely to be limited. One reason is that setting up an SHC would require international cooperation, which is in rather short supply. Second, the economic and political stability of many of the major economies in the world seems fragile. For instance, an SHC that included the euro would be subject to persistent concerns about the centrifugal forces perpetually threatening the currency zone and the viability of its common currency. A third problem is the relatively smaller size and lower liquidity of financial markets outside the United States and in international transactions that do not involve the dollar. Conducting transactions using an SHC would therefore be costlier, at least for the first few years, relative to transacting in dollars. It is not obvious who would bear the costs and what incentive transacting parties would have to use a costlier medium of exchange that would put them at a competitive disadvantage.

There is one potential SHC candidate in the wings—the Special Drawing Rights (SDRs) issued by the IMF. The IMF created the SDR, which it calls an international reserve asset, in 1969 to supplement the official reserves held by its member countries. As of mid-2020, SDR 204 billion (equivalent to about \$290 billion as of August 2020) had been allocated to IMF members, including SDR 183 billion (roughly \$260 billion) allocated in 2009 in the wake of the global financial crisis.

One major difference between the SDR and a national currency is that the SDR has no real backing. Unlike a central bank-issued fiat currency that has a national government's authority to levy taxes behind it, the IMF has no such power. The SDR is a unit of account for the IMF, which maintains its accounts in SDRs, and even a store of value for national central banks. It is not, however, a useful medium of exchange. Thus, the SDR is really just a composite currency and the IMF takes pains to emphasize that 'the SDR is neither a currency nor a claim on the IMF. Rather, it is a potential claim on the freely usable currencies of IMF members. SDRs can be exchanged for these currencies'.

Moreover, the IMF has a governance structure—determining how voting rights are distributed among countries—that remains heavily tilted towards advanced Western countries. These countries can collectively muster a majority of votes that allows them to dominate the institution's policy decisions, a situation that does not engender a great deal of trust in the institution among the EMEs. In short, a viable new global currency issued by a multilateral organization requires a level of global cooperation that seems unrealistic for the foreseeable future. If countries could not agree on a relatively simple and costless measure to ramp up issuance of a common digital currency when the global economy faced an economic collapse, it is highly unlikely that in calmer times the major economic powers would put aside their competing interests to agree on a global currency, digital or otherwise.

VII. Will China's CBDC threaten the dollar's dominance?

The renminbi made a dramatic move onto the global financial stage after 2010, when the Chinese government started opening up China's capital account and promoting its currency through a variety of policy measures

(Prasad, 2016; Subacchi, 2016). In 2016, the IMF gave the renminbi its official imprimatur as a reserve currency by including it in the SDR basket of currencies, potentially adding momentum to the progress the renminbi had already made as an international payment currency.

The renminbi has since come to be a modest player in international finance, now accounting for about 2–3 per cent of global payments intermediated through the SWIFT network. Other indicators such as renminbi deposits in Hong Kong and the offshore issuance of renminbi-denominated bonds (dim sum bonds), all of which were on a rapidly rising trajectory in the first half of this decade, have fallen off sharply since 2015. The renminbi now accounts for 2 per cent of global foreign exchange reserves, an important but still modest fraction. Nevertheless, even these modest shares rank the renminbi fifth worldwide as an international payment currency and as a reserve currency.

In short, the renminbi's rise has been significant—especially for a currency issued by a country that does not have an open capital account or a market-determined exchange rate—but uneven. It has not proven to be the key challenger to the dollar's dominance that some had expected it to be, particularly in its role as a store of value (Prasad, 2020).

Is China's CBDC—the eCNY—likely to be a game changer in the renminbi's putative rivalry with the dollar or, more generally, in its status as a reserve currency? In some respects, especially regarding the technological sophistication of its retail payment systems, China has managed to leapfrog the United States. It therefore seems a plausible proposition that, with its CBDC likely to be in operation before those of other major economies, the eCNY will give the renminbi a boost in the tussle for global financial market dominance (Yao, 2017, 2018).

The eCNY, in tandem with China's cross-border payment system, will eventually make it easier to use the currency for international transactions. Russia—or, for that matter, Iran and Venezuela—might now find it easier to be paid in renminbi for their oil exports to China. This means they can avoid US financial sanctions, a tempting prospect for many such governments. As the renminbi becomes more widely used, other smaller and developing countries that have strong trade and financial links with China might find it advantageous to invoice and settle their trade transactions directly in that currency.

The eCNY by itself will, however, make little or no difference to foreign investors' perception of the renminbi as a reserve currency. At a technical level, there are two major constraints on the renminbi's role as a reserve currency. The first is that capital flows into and out of the country remain subject to restrictions, even if these restrictions are being gradually dismantled. The second is that the renminbi's exchange rate is still managed by the People's Bank of China (PBC) rather than being determined by market forces. Neither of these conditions is likely to change anytime soon. The Chinese government has indicated that it plans eventually to have an open capital account. Moreover, the PBC has committed to reducing its intervention in foreign exchange markets to prevent exchange rate appreciations or depreciations driven by market forces (Miao and Deng, 2019). Still, convincing foreign investors that these are durable commitments remains a challenge for the Chinese government.

Even if the government were to take these steps, the renminbi will not be seen as a safe haven currency that foreign and domestic investors turn to in times of global financial turmoil. The Communist Party of China's control of the country's political system means that the country lacks a system of checks and balances. Some have argued that, while China has a one-party non-democratic system of government, there are sufficient self-correcting mechanisms built into the system that prevent the government from running amok. This is unlikely to be seen as a durable substitute for an institutionalized system of checks and balances such as that in the United States—where the executive branch, the legislative branch, and the judiciary have independence from and serve as constraints on the unbridled exercise of powers by the other branches.

In short, the eCNY is likely to help promote the role of the renminbi as an international payment currency. But it will not dent the dollar's status as the dominant global reserve currency.

VIII. Conclusion

New and evolving financial technologies, including the advent of cryptocurrencies and CBDCs, will have implications for certain aspects of the international monetary system, but these are not likely to be revolutionary and will be realized only over a number of years. Some changes facilitated by Fintech could occur sooner, although their effects on global finance will be limited primarily to the operation and structures of financial markets themselves rather than any fundamental reordering of the international monetary system.

More efficient payment systems will bring a host of benefits, making it easier, for instance, for economic migrants to send remittances back to their home countries than is currently possible. It will become easier even for investors with modest savings to diversify their portfolios and seek higher returns through better access to international

investment opportunities. In principle, financial capital will be able to flow more easily within and across countries to the most productive investment opportunities, raising global economic welfare—at least as measured by GDP and consumption capacity. With easier capital flows across national borders, though, many countries will also face risks related to the volatility of those flows and the complications that it creates for managing their exchange rates and their economies. New channels for transmitting payments across borders more quickly and cheaply are likely to make it more difficult to regulate and control capital flows. The resulting challenges will be especially thorny for EMEs and other small open economies.

The landscape of global reserve currencies might seem to be at the threshold of disruption as cryptocurrencies gain traction as mediums of exchange and stores of value. In reality, despite all the hype, the proliferation of cryptocurrencies will not have a substantial disruptive effect on the major reserve currencies, especially the US dollar. Unbacked cryptocurrencies are much too volatile to be considered stable sources of value or reliable mediums of exchange. On the other hand, private stablecoins are likely to gain traction as means of payment. But insofar as their stable values depend on their being backed by fiat currencies, stablecoins are unlikely to become independent stores of value.

The topography is likely to shift a great deal more for smaller and less developed economies. National currencies issued by their central banks could lose ground to private stablecoins and perhaps also to CBDCs issued by the major economies. These countries might also face some difficult choices in tying their economic destinies to specific currency blocs if rivalries between the major currencies (and the economies issuing them) result in a fragmentation of the international monetary system.

Even among the major reserve currencies, there are some shifts in store. The US dollar could lose some ground as a payment currency, although it will remain dominant both along this dimension and as a store of value. A digital renminbi will help the currency gain traction as a payment currency but the digitization of the currency by itself will do little to boost its status as a reserve currency. The renminbi's further rise, even if gradual and modest, and the advent of additional stablecoins, could reduce the importance of the second-tier reserve currencies, including the euro, the British pound sterling, the Japanese yen, and the Swiss franc.

At most, the dollar will lose a bit of ground as an international payment currency as alternative cross-border payment channels proliferate and as transactions between currency pairs that do not involve the dollar become cheaper and easier to execute. But the dollar's dominance among global fiat currencies will remain unchallenged, especially because other major currencies could see even greater erosions in their prominence as mediums of exchange and as safe havens.

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