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The Rise of Digital Money: A Strategic Plan to Continue Delivering On The IMF's Mandate

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THE RISE OF DIGITAL MONEY—A STRATEGIC PLAN TO CONTINUE DELIVERING ON THE IMF'S MANDATE

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The report prepared by IMF staff has benefited from comments and suggestions by Executive Directors following the informal session on April 2, 2021. Such informal sessions are used to brief Executive Directors on policy issues and to receive feedback from them in preparation for a formal consideration at a future date. No decisions are taken at these informal sessions. The views expressed in this paper are those of the IMF staff and do not necessarily represent the views of the IMF's Executive Board.

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EXECUTIVE SUMMARY

Rapid technological innovation is ushering in a new era of digital money. Payments will become easier, faster, cheaper, and more accessible, and will cross borders swiftly. These improvements could foster efficiency and inclusion, with major benefits for all.

But to reap the full benefits and manage risks, policymakers must step up, and view this transformation with perspective as implications are wide-ranging and profound.

First, new forms of money must remain trustworthy. They must protect consumers, be safe and anchored in sound legal frameworks, and support financial integrity.

Second, domestic economic and financial stability must be protected by carefully designed public-private partnerships for the provision of digital money, a smooth transition of the role of banks, and fair competition. Even climate sustainability and the efficiency of fiscal policy could gain.

Third, the international monetary system (IMS) should remain stable and efficient. Digital money must be regulated, designed, and provided so countries maintain control over monetary policy, financial conditions, capital account openness, and foreign exchange regimes. Payment systems must grow increasingly integrated, not fragmented, and must work for all countries to avoid a digital divide. Moreover, reserve currency configurations and backstops must evolve smoothly.

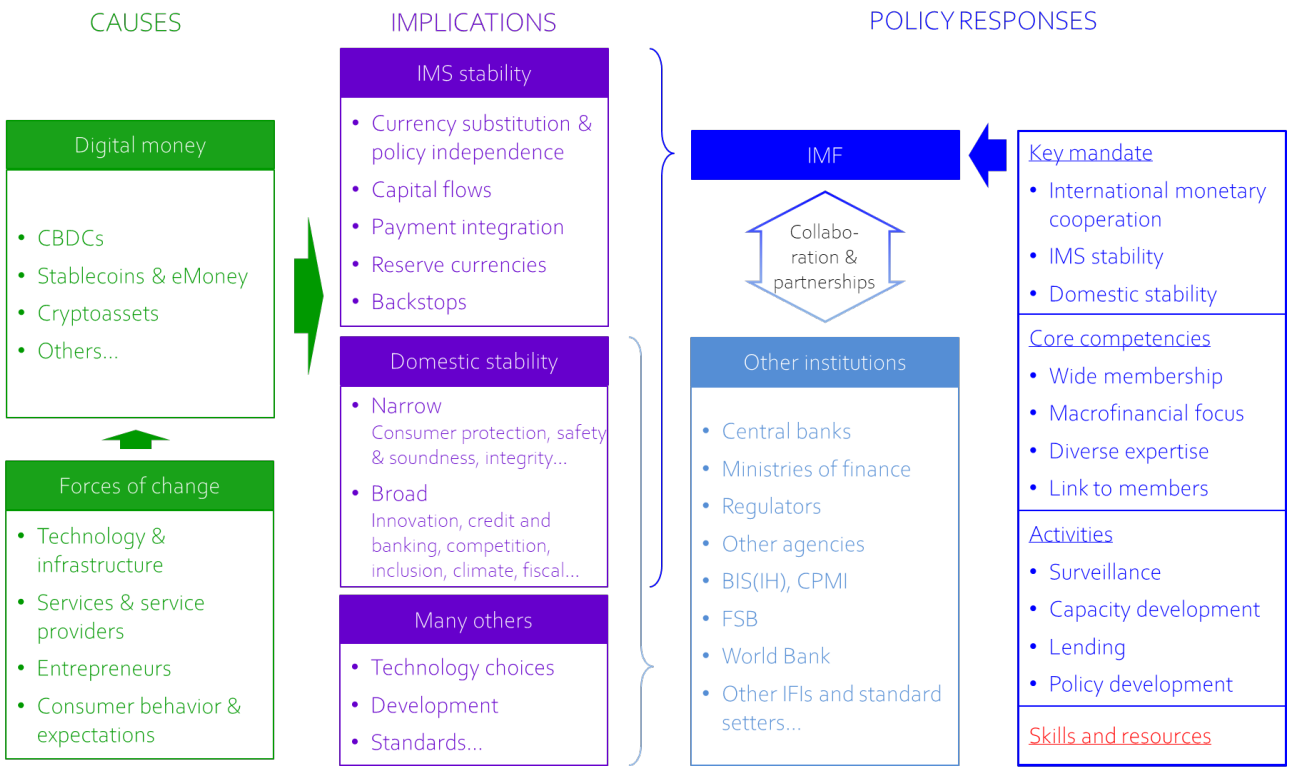
The Fund has a mandate to help ensure that widespread adoption of digital money fosters domestic and international economic and financial stability. It must monitor, advise on, and help manage this far-reaching and complex transition. To do so, it offers four core competencies: its near universal membership, providing a platform to guide the IMS towards a common vision and to foster equitable policies; its focus on macrofinancial policies and spillovers; its diversity of expertise; and its unique ties to member countries through surveillance and capacity development.

The Fund too must step up. To satisfy its mandate, and keep pace with new policy challenges, the Fund must rapidly strengthen, widen, and deepen its well-established work on digital money, while coordinating and collaborating closely with other institutions within the confines of its mandate. The Fund must also rapidly ramp up its resources devoted to these topics.

This paper (stylized in Figure 1 below) reviews the forces of change driving the adoption of digital forms of money; considers the policy implications and new policy questions that arise;

clarifies the Fund's role in tackling these questions; outlines a strategy to do so; and provides initial estimates of the resources necessary to deliver this vision.

Figure 1. The Paper at-a-Glance



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FORCES OF CHANGE

1. Technological change is rapid and accelerating, fostering new forms of digital money. These include central bank digital currencies (CBDCs), which a February 2021 survey of IMF mission chiefs suggests are being closely analyzed, piloted, or likely to be issued in 70 percent of 159 countries. Examples are the Peoples' Bank of China's (PBOC's) eCNY pilot project and the Bahamas' Sands Dollar. Other forms of digital money include privately issued "stablecoins," such as Diem and USD Coin; eMoney, such as M-Pesa; and cryptoassets (also referred to as virtual assets), such as Bitcoin. This paper will mostly focus on the first three, while occasionally referring to cryptoassets. As appropriate, the paper will distinguish between effects of CBDCs from those of privately issued money and cryptoassets. Finally, while different types of digital money are considered, this paper does not take a stand on which form may predominate.

2. The adoption of digital money will depend in part on the stability of its value relative to the domestic unit of account. In this respect, digital forms of money differ—some are the equivalent of notes and coins, while others resemble liquid investment products. Box 1 offers an overview.

Box 1. Basic Distinguishing Features of Digital Forms of Money

Digital monies differ according to the *issuer*—whether private or public; *denomination*—in an existing monetary unit such as the dollar or euro, in a basket of currencies, or in a new unit of account; *convertibility* (for CBDC) or *redemption* (for stablecoins and eMoney) into currency at a fixed face value or at the going market value; *type of backing* (for stablecoins and eMoney)—including reserve assets of varying degree of stability and liquidity, on which end-users may have a direct legal claim, as well as additional public backstops such as access to emergency liquidity; and *technology*—centralized or decentralized settlement over permissioned or permissionless networks. Adrian and Mancini-Griffoli (2018) offers a full taxonomy and a more detailed comparison.

While eMoney pledges to redeem into currency at a fixed face value, not all stablecoins do so. Some redeem at the going market value of the underlying reserve assets. Stablecoins rely on decentralized settlement, whereas settlement of eMoney can be both centralized and decentralized. By most standards, cryptoassets do not represent money as their value is overly volatile and lacks backing. However, recent announcements by major companies such as Tesla to accept these for payment, as well as Mastercard and Visa to support selected cryptoassets on their networks, suggests increasing use to transfer value, if not to store value.

3. A key enticement of digital money comes from its efficiency as a means of payment. Advantages include low costs of transactions and accessibility, programmability allowing for payments automation and integration into existing digital services—both financial and social—and

strong network effects over potentially large existing user bases. The immediate benefits to the cost of doing business, innovation, financial inclusion, and market integration could be large.

4. For these reasons, the adoption of digital money could be high for domestic and cross-border use, including trade denomination and payments, international transfers, and remittances, as well as the substitution of savings into more stable foreign currencies.

5. The adoption of digital money will be further buoyed by rapid changes in technology and infrastructure, services and service providers, consumer preferences, and the congruence of these trends.

6. The underlying technology and infrastructure are advancing rapidly. Distributed ledger technologies (DLTs) are becoming faster, more secure, more energy efficient, and increasingly scalable—they should soon be able to process large amounts of transactions seamlessly. Furthermore, DLT networks are becoming interoperable thanks to technological advancements.

7. In addition, leaps in artificial intelligence and in the analysis of Big Data are making data collected from the transfer of digital money more valuable, thus encouraging entry of new providers and significant research and development.

8. Services and service providers are also driving the adoption of digital money. New fintech firms, telecoms, and Big Techs are driven by new business models, anchored in leveraging data from digital payments. Banks themselves are adapting rapidly and are looking to remain central to payments and intermediation. Financial and payment services may soon be delivered over vast global platforms, seamlessly integrated with social and e-commerce services.

9. Similarly, financial assets that migrate to DLT to simplify back-end processing and reconciliation will have to rely on digital money and interoperable networks to ensure payment automation (payment-versus-delivery). Such is the objective of project Helvetia designed by the Swiss National Bank in collaboration with the BIS Innovation Hub.

10. Moreover, important public initiatives are favoring the use of digital money. Some countries are using national digital identities to facilitate and automate digital transactions—the prime example being India's Aadhaar. And others are favoring digital money for more efficient transactions to, or from, the government—as in Peru, Togo, India, and the Philippines.

11. Finally, consumer behavior and expectations are also driving digital money adoption. Experience with social media, communication, and tourism all contribute to the expectation that payments and financial services should be equally convenient, immediate, accessible, and cheap. However, poorer segments and countries are the worst served by today's payments systems, and pay disproportionately higher fees, giving rise to the imperative to fix payments for all.

12. In addition, expectations are that services should span borders seamlessly—that sending money should be as simple as sending an email, without having to choose between domestic and air-mail stamps.

13. Finally, the Covid-19 pandemic has accelerated these trends. For example, in the second quarter of 2020, worldwide transactions via PayPal increased by 15 percent, and the number of new active accounts doubled relative to the start of the pandemic. A Research and Markets report (June 2020) found that nearly 50 percent of global shoppers were using digital payments more than before the pandemic. And the majority planned to continue doing so, having paid the fixed costs to get used to new technologies.

POLICY IMPLICATIONS AND NEW QUESTIONS ASKED BY MEMBER COUNTRIES

14. Widespread adoption of digital money and related financial services is not a standalone topic of special interest to technologists. It has profound and already emerging policy implications, including on the IMS. Understanding the technology and adoption patterns is merely a first step. The interest for a policy-focused institution such as the Fund is to understand wider implications so it may help guide policy responses.

15. Indeed, the Fund is already receiving increasingly pressing and complex questions from member countries related to the growing use of digital money. This section aims to gather some of these questions and those that are likely to arise as digital money adoption spreads.

16. The policy implications of digital money roughly fall into three categories. The first covers *international implications* stemming from the cross-border use of digital money for the IMS, which the Fund has a unique mandate to oversee. The second and third categories consider the domestic use of digital money denominated in the domestic monetary unit, and focus on domestic economic and financial stability. *Narrow implications* are directly related to the digital form of money; they involve consumer protection, safety and soundness, and financial integrity. *Broad implications* cover the impact on innovation, credit provision and banking, competition, financial inclusion, as well as climate sustainability and fiscal policy effectiveness.

17. The approach of this section is thus comprehensive by design. Clearly, the Fund would not be the sole institution considering, and responding to, many of these implications. As discussed later, it is essential that the Fund partner closely with other institutions, including country authorities, to explore adequate policy responses.

18. The domestic and international implications of the adoption of digital money are important to consider because even countries with sluggish or low adoption of digital money will be exposed to international effects. Moreover, many effects are closely related. Domestic economic and financial stability contribute to orderly exchange arrangements and ultimately a stable and effective IMS. Conversely, a common vision for the IMS will condition domestic policies relative to digital money design and regulation, with knock-on effects on the ability to meet domestic policy objectives.

A. Implications for the International Monetary and Financial System

19. The IMS comprises rules and conventions, mechanisms, and robust institutions. *Rules and conventions* cover monetary and exchange rate arrangements, cross-border payments for capital account transactions, capital flows and related management measures, international reserves, and bilateral swap lines. *Mechanisms* allow effective and timely balance-of-payments adjustments and a global safety net (including access to Fund financing). *Robust institutions* ensure the rules and mechanisms are enforced so the IMS remains stable and efficient.

20. Multiple aspects of the IMS are likely to be impacted by the widespread adoption of digital money. This section covers monetary and financial issues, payments, reserve currency configurations, and backstops. Some instances refer to the scenario of widespread adoption of a stablecoin that adopts its own unit of account, and thus turns into a global private digital currency. That is, after a stablecoin reaches a certain critical global usage, its provider could abandon the backing in fiat currency (provided this is legally authorized), and manage value through issuance and potential interventions in foreign exchange with major currencies (IMF 2020).

Monetary and Financial Issues

21. Widespread currency substitution would undermine monetary policy independence and lending of last resort. Digital money could lead to much more widespread currency substitution, especially in countries with high inflation and volatile exchange rates. Currency substitution could be exacerbated by the lower costs of obtaining, storing, and spending digital money. As discussed in IMF (2020), currency substitution is already widespread (foreign currency deposits are higher than 50 percent in more than 18 percent of countries world-wide), and persist despite countries' efforts to redress domestic policies. To the extent that foreign currencies are issued by countries with business cycles not correlated to the home country, the home country will suffer from ineffective money policy control and more volatile inflation, with a disproportionate impact on the poorer and more vulnerable households.

22. Currency substitution into a global private digital currency would subject countries to additional risks. In particular, the monetary policy stance of a private firm is likely to come with a different optimization horizon and set of incentives than those of a local central bank.[1]

23. Countries are already asking what measures can they adopt to limit heightened—and expected—pressures of currency substitution from the introduction of digital money outside their borders. In other words, how should countries deal with spillover effects from digital money? This is an important question as it draws countries lagging in digital money adoption, and potentially with weak institutions and capacity, much faster than expected to the frontier of policy debates.

[1] However, academics (Brunnermeier, James, and Landau 2019) argue that the notion of optimal currency areas could be defined around digital platforms which encompass more homogeneous users in terms of spending, employment, and shock patterns than do countries with physical boundaries.

24. On the recipients' side, questions emerge on the technical feasibility of limiting digital money circulation, transactions, and holdings. Questions also touch on the policy desirability and appropriateness of imposing restrictions on cross-border transactions in digital money.

25. On the issuers' side, it may be possible to agree on design principles to allow foreign authorities to set basic parameters of wallets or networks to limit currency substitution. However, these design principles would need to be coordinated at the global level to ensure they meet the needs of all countries, and that they are widely adopted to limit arbitrage.

26. Relatedly, countries are asking whether existing capital flow management measures may be circumvented by digital forms of money. Most IMF member countries, particularly EMDEs, use some form of capital flow management measures, some on a structural basis and others only temporarily. These measures could be harder to implement if digital money were transmitted on new platforms that are not typically bound by capital flow management measures. Existing regulations and implementation practices will need to evolve so capital flow management measures remain robust to the introduction of digital money. Guidance in this area is missing entirely.

27. Even if existing measures remained effective, digital money would likely increase gross capital flows, with both pros and cons to policymaking. Markets should become more integrated as platforms-based financial services lower access costs, and as risk-sharing opportunities develop. On the one hand, this would facilitate hedging. On the other, it could increase contagion risks as already seen with the growing integration of emerging market economies. Importantly, large gross foreign asset positions imply higher leverage and greater valuation effects, with knock-on effects on current account balances and potential balance of payments problems (Obstfeld 2004 and 2012). In addition, capital flow volatility could increase as herd effects from less informed investors materialize. The pattern of net capital flows is more difficult to forecast, and would need further analysis, especially since it relates to countries' savings and investment behavior.

28. With higher gross capital flows and potentially less effective capital flow management measures, countries may find it harder to manage their financial conditions and exchange rates, or freely choose their exchange rate regime. Global financial conditions could be transmitted more readily around the world, complicating policy tradeoffs. And today's large share of countries managing their exchange rates could be pushed towards more open capital accounts and flexible exchange rates, thus needing to maintain an effective and independent monetary policy.

Payments and Interoperability

29. The risk of fragmentation and of a global digital divide is stark. Regional settlement arrangements could proliferate, driven by countries' desire for autonomous and direct settlement. Such arrangements could also be instruments of geopolitical interests and forces, to avoid or impose bilateral sanctions.

30. Digital money allows countries to establish regional payment arrangements cheaply, but these arrangements and choice of technologies could limit currency convertibility

internationally. Given that one of the purposes of the Fund is to assist in the establishment of a multilateral system of payments in respect of current transactions, and in the elimination of foreign exchange restrictions, these challenges are of direct relevance to the Fund.

31. Moreover, privacy implications—discussed more narrowly above—also loom on geopolitics. As digital money gets traded across borders, so does information. Thus, ways to protect that information and build trust in cross-border payment systems will need international cooperation.

32. But opportunities also exist. Digital money could be leveraged to foster integration. Interoperability of digital forms of money is desirable for a multilateral IMS. However, it is not straightforward. The international exchange and treatment of data will raise pressing new questions, and likely some tensions on the nature of safeguards. Questions arise as to which institution will backstop liquidity, a key ingredient in the functioning of payment systems. Moreover, new solutions must be explored, such as multilateral settlement or foreign exchange platforms, common norms or principles for the design of digital money, the validation of identities, and the transfer of data, as well as the convergence of regulatory and legal frameworks.

33. These are possible, but only with strong international cooperation and a clear global vision. The IMS stands at a crossroads between integration and fragmentation.

Reserve Currency Configurations and Backstops

34. Currencies used for international transactions, such as invoicing and paying for imports, could change with the advent of digital money. In one scenario, the dollar could become even more dominant if it were available digitally at lower cost and to a wider user-base. Another scenario could see other (reserve) currencies used more frequently, if these offered significant advantages in terms of costs, trust, and ease of use as in the case of a foreign CBDC, and were potentially propelled by a vast existing user-base.

35. Widespread use of a currency is indeed a first (though not sufficient) step towards its internationalization. The self-reinforcing cycle, depicted in Gopinath and Stein (2019), begins with wanting to hold the currency in which one is paid, thus requiring safe assets in that currency, decreasing interests on these assets, incentivizing issuance, and thus pricing in that currency to hedge. Use of currencies in trade thus tends to drive market development in a self-reinforcing cycle. But, importantly, the credibility and stability of institutions and the rule of law, as well as geopolitical forces, remain essential ingredients to currency internationalization and tend to move more slowly.

36. Thus, the digitalization of money may accelerate changes to the configuration of reserve currencies, but may not change it dramatically over a short period. Regional patterns, where geopolitical forces are stronger or payment arrangements more binding, may instead evolve more rapidly. In general, policymakers are concerned with tail risks of a more sudden shift in reserve currency configurations. A more multipolar IMS could ultimately be safer and more efficient, but

would likely be more unstable in the transition as investors rebalance official foreign reserve portfolios.

37. Questions will thus arise on the need to potentially redesign backstops. Key aspects of digital money (such as programmability) could facilitate the regional pooling and sharing of official foreign reserves, and their disbursement. Regional backstops may thus be reinforced and become more credible, in addition to global backstops as provided by the IMF. Cooperation between these various backstops may become increasingly important.

38. However, some suggest leveraging the features of digital money to centralize and mutualize the existing discretionary network of bilateral central bank swap lines. The topic merits exploration, as discussions remain preliminary and high-level at this stage. In addition, IMF operations and lending could benefit from technologies introduced by new digital forms of money, such as to expedite disbursements, though only as allowed by the IMF's Articles of Agreement.

39. Global stablecoins in their own denomination raise significant new risks, including the lack of available safe assets and a credible safety net. However, widespread adoption would raise the question of how to evolve the global safety net, potentially by lending in these new forms of money.

B. Narrow Implications for Domestic Economic and Financial Stability

40. Narrow implications of digital money used domestically and denominated in the domestic monetary unit include consumer protection, safety and soundness, and financial integrity. Upholding these objectives must always be a priority, however widespread digital money adoption becomes. And especially when adoption is extensive, financial stability is at stake. In each case, complex policy questions and challenges arise.

Consumer Protection and Privacy

41. Risks to consumer protection mostly affect stablecoins. Risks stem from potential losses on reserve assets, illiquidity of those assets, or their seizure by other creditors in case of the issuer's bankruptcy. Any of these could undermine the stablecoin provider's ability to redeem coins at a fixed face value (if that were the pledge).

42. As a result, runs from stablecoins could materialize. Financial stability could suffer if reserve assets had to be liquidated on a large scale, or withdrawn from large banks. Clearly, the larger the stablecoin providers, the greater the effects on financial stability.

43. Runs out of commercial banks to stablecoins, or CBDC, are less likely in the domestic case. Deposit insurance should limit runs out of retail deposits. And liquid and safe alternatives to bank deposits already exist, such as government only mutual funds. CBDC may also allow central banks to more easily accommodate a sudden demand for liquidity. Finally, runs from banks in

countries that experience a currency or sovereign crisis will occur nonetheless, whether or not domestic digital money exists.

44. As a result of these concerns, countries have questions on appropriate regulation of stablecoins. Should they be required to fully back coin issuance? What assets should qualify as reserve assets? Where should these be kept—in commercial banks, or in central banks? Are legal structures adequate to protect reserves from other creditors in case of the issuer's bankruptcy? Currently, regulatory approaches and legal frameworks are fragmented, little guidance exists, and country circumstances differ significantly.

45. In addition, questions emerge on appropriate safety nets and crisis management measures. CBDC could actually improve the safety net to the extent liquidity can be provided to meet bank runs at lower costs and more immediately, even in remote areas. Questions are more difficult for stablecoins. Country authorities will have to decide whether, and which types of, stablecoins should have access to deposit insurance, and to liquidity from the central bank.

46. The protection of consumer data is also a rising concern. Privacy is an important objective in itself in many countries, and is key to promote trust in the increasingly digitalized financial system.

47. Countries, however, struggle to find an appropriate balance between protecting privacy, enticing private sector participation, and ensuring financial integrity in line with the Financial Action Task Force (FATF) standards. These last two objectives require a higher degree of data sharing than users may seek just on the basis of privacy. Different approaches have been proposed to navigate these tradeoffs, but still need to be carefully compared between countries.

Safety and Soundness

48. A clear legal framework Is critical to safety and soundness. However, digital money raises some fundamental questions about current legal frameworks. The public law status of CBDC must be clarified in central bank law (to address the question whether the central bank is authorized to issue CBDC) and monetary law (to address the question whether the CBDC is a currency). Public law also needs to clarify the legal status of privately issued money, such as stablecoins. Should they be treated as eMoney, bank deposits, securities, commodities, or other? Finally, the private law nature of CBDC and stablecoins must be clarified, including when a payment becomes final and what rights holders have in case of insolvency of the issuer or depositary.

49. Answers to these questions are delicate, as they depend in part on the design of digital money, as well as country circumstances. However, they are essential for stability and are thus urgent. But they cannot be taken in isolation. Answers will have an enormous bearing on the development of digital money. For instance, classifying a form of digital money as a security will significantly complicate its exchange. While some jurisdictions are advanced in these areas, most are lagging behind.

50. Moreover, legal frameworks will have to adapt to more intensive use of artificial intelligence, which clouds the responsibility between the providers of end-services and those of enabling software. However, initial reviews of central banks' and regulatory authorities' preparedness to deal with digital risks seems lacking in many cases.

51. Another important aspect of safety and soundness is operational resilience, including cyber-security. Knock-on effects on financial stability can be substantial, especially as heightened interconnections between providers of money could increase contagion risks. This is true of both CBDC and stablecoins. It is also true of cryptoassets which are rapidly growing in market capitalization (currently nearly $2 trillion, up from $200 billion a year ago) and are increasingly held by mainstream financial institutions.

52. Cyber-security is the second most important issue that mission chiefs report central banks being worried about when it comes to digital money. But in fact, cyber-security is only one of the elements that make up digital risks. New digital forms of money must be robust to cyber attacks, outages, technical glitches, new digital fraud risks, and faulty algorithms. Major outages, such as those that occurred recently to the Google cloud and the euro-system's Target2 large value payment system, could occur more often.

Financial Integrity

53. Financial integrity could be significantly affected by digital money—both positively or negatively. In fact, a survey of IMF mission chiefs reveals that of the potential implications of digital money, central banks are most concerned with financial integrity. Without proper regulation, digital money can become a virtual safe-haven for criminals to conduct illicit financial transactions. Effective implementation of a robust anti-money laundering and combating the financing of terrorism (AML/CFT) framework is needed to mitigate this risk. CBDC must be designed so it does not impede effective AML/CFT controls, and privately issued digital money providers must be subject to proper AML/CFT obligations (including to report suspicious transactions to the competent authority) and supervision or monitoring. In fact, digital money could actually facilitate such monitoring through more efficient real-time data analytics.

54. However, many countries lack the capacity to implement and monitor effectively AML/CFT measures in the digital world, and thus risk attracting criminals as well as unlawful providers looking for loopholes (regulatory arbitrage). This could lead to further limitation of correspondent banking relationships. While the FATF has clarified how AML/CFT controls should apply to the digital world, implementation of these controls remains uneven and challenging for many countries.

C. Broad Implications for Domestic Economic and Financial Stability

55. The domestic use of digital money that is denominated in the domestic monetary unit has broad implications, including for innovation, credit provision and banking, competition, financial inclusion, climate sustainability, and fiscal policy effectiveness. As earlier, each case raises

opportunities and risks, as well as new policy questions and challenges related to preserving economic and financial stability. In contrast to the discussion of international effects, monetary policy is likely to maintain traction as long as digital money is credibly exchangeable *at par* with domestic notes and coins, and the central bank remains the most credit-worthy agent in the country (Mancini-Griffoli and others, 2018).[2]

Innovation and Public-Private Partnerships

56. The demarcation and collaboration between the public and private sectors in the provision of digital money still needs to be analyzed and tested. Tradeoffs arise among innovation, efficiency, choice of services, safety, and the structure and stability of the banking sector.

57. Most of the money we use today is privately issued—by commercial banks in the form of deposits. That money is redeemable into currency—notes and coins—at a fixed face value. However, banks do not fully back deposits with central bank reserves; they make loans and hold other assets. So prudential regulation and backstops such as deposit insurance and lending of last resort make the redemption pledge credible.

58. The question arises as to whether and how to extend this dual public-private system into the digital era? How should stablecoins be regulated? Could some benefit from a special license to fully back coins with central bank reserves, under strict central bank supervision? Such a license would allow the private sector to innovate in the technology for coin issuance and settlement, and to offer users variety (some stablecoins could sacrifice speed of settlement for greater programmability and customization, for instance). At the same time, full backing in central bank reserves would make stablecoins safer and limit destabilizing runs. However, it could favor bank disintermediation. All these policy questions must be taken into account when designing regulation; not an easy feat.

59. Even without considering so far, central banks will have to determine how to involve the private sector in the provision of CBDC (Adrian and Mancini-Griffoli 2021). Few central banks expect to service users directly. And many are open to some private sector involvement, if anything to provide wallet services, and to expand the feature-set of CBDC (the Bank of England (2020) was a precursor in advancing the notion of "a platform model of CBDC"). But how will private sector solutions be vetted and regulated? Much is left to be determined. And some countries may be looking to CBDC to impose a public monopoly on the issuance of money. Individual countries will decide for themselves, with stability, operational resilience, as well as innovation and product variety at stake.

[2] If anything, transmission of monetary policy could be more effective if digital money spurs financial inclusion, thereby exposing more citizens to interest rate-based savings and credit instruments. In countries where real equilibrium interest rates remain very low or negative, interest-bearing CBDC would eliminate the zero lower bound if cash use were constrained. However, while countries are still wrestling with this question, many express concerns about the political repercussions.

Credit Provision and Banking

60. Credit is provided predominantly by banks in most jurisdictions. Widespread adoption of digital money—whether CBDC or stablecoins—would likely alter the role of banks through at least four channels, with implications for credit provision, market structure, and financial stability.

61. First, banks' business models could come under pressure to the extent that the digital currency provides a close alternative to deposits. Banks might have to pay higher rates on deposits or see their funding shift from stable, low-cost deposits, to more expensive, runnable wholesale funding. Banks might respond by taking on greater risks to support profits. Or they could be subject to heightened market discipline imposed by more informed and attentive creditors. In that case, banks would likely attempt to raise lending rates, to the extent they had market power, or would have to live with lower margins. The extent to which this would undermine financial stability would have to be carefully ascertained (Agur, Ari, and Dell'Ariccia 2019).

62. More generally, credit intermediation could shift away from banks and toward non-deposit taking institutions and markets. To what extent this new equilibrium is desirable, and to what extent the transition might be destabilizing are essential questions about which the economics literature has so far provided little guidance. However, countries will have to take positions to decide how much of the potential disintermediation of banks would need to be managed or avoided by appropriately designing and regulating digital forms of money.

63. The second likely transformation is the shift in value-added from traditional commercial banks to Big Techs, to the extent these are more efficient at capturing and analyzing users' data. Big Techs are expected to increasingly become involved in payments, not necessarily as providers of stablecoins (although the possibility remains), but merely as distributors of digital money (such as through wallet services), facilitators of digital money services (such as through a messaging application used to initiate transactions of digital money kept in a separate wallet), and aggregators of financial services (through platforms, just as Amazon or Alibaba today are aggregators of e-commerce services).

64. As Big Techs gather data, manage customer relations through ubiquitous digital platforms (as opposed to networks of physical branches), and become essential to better design and customize financial services, they will keep an increasing share of the producer surplus. This would put downward pressure on bank profits, and potentially induce some banks to take more risks, while others consolidate to concentrate on more commoditized back-end treasury services such as liquidity provision. Again, the degree to which this scenario could materialize and could undermine financial stability should be investigated early, so corrective policy action can be taken immediately. And regulatory approaches to Big Techs should be clarified since capital, loan retention, and licensing requirements will affect the scenario's likelihood. For instance, questions arise on the value of data relative to traditional collateral, and the degree to which data on a loan recipient should alleviate capital charges on that loan.

65. The third—though still nascent—transformation is the rise of decentralized finance (DeFi). This covers the automated and decentralized capital markets and related securities, trade finance, and lending based on digital money (mostly crypto-assets thus far) and smart contracts. While the market is still small (the value of assets in DeFi contracts amounted to $1 billion in January 2021), it is growing quickly. A recent Federal Reserve Bank of St. Louis primer on DeFi warns of risks including security vulnerabilities, scaling problems, and false decentralization, but underscores the potential for a more robust and transparent financial infrastructure. These new questions and their impact on financial stability will need to be carefully reviewed.

66. The fourth transformation relates to collateral. Credit provision relies on the adequate availability of collateral to provide in exchange for liquidity. Countries are concerned with several scenarios. Substantial CBDC or stablecoin demand might absorb a large share of government bonds. This could affect the yield curve, and in the case of stablecoins whose reserves cannot be lent out, the availability of collateral. And stablecoins fully backed by central bank reserves could immobilize and segregate central bank liquidity which would otherwise be freely lent between banks to satisfy daily payment shocks. The degree to which these scenarios are problematic or could be alleviated with apposite policies should be thoroughly investigated.

Competition and Market Contestability

67. New digital forms of money will likely have an impact on market structure in payments. Network externalities will tend to favor first entrants, or providers with pre-existing networks on which to distribute their digital money. Big Techs thus have a notable advantage.

68. Country authorities are increasingly asking how to minimize these network effects and maintain market contestability. Can interoperability among digital monies or payment networks be mandated, and is it sufficient? Must data portability regulations be enacted, and what might the impact be on market structure? If data is an increasing return to scale input to production—in the sense that more data offers marginally more value when the stock of data is already high—then data portability would do little to combat market concentration. The question is still open. Alternatively, should network effects prove so strong that breaking them down would lead to inefficiencies, how can regulation developed in the context of other network utilities be extended to the provision of digital money?

Financial Inclusion

69. Financial inclusion has greatly benefited from the introduction of digital money. Today, there are one billion registered mobile money accounts across 95 countries, with close to $2 billion transacted through these accounts every day. Sub-Saharan Africa has become a leader in mobile money, accounting for almost half of mobile money accounts worldwide. Mobile money matters for financial inclusion since mobile money services are available in 96 per cent of countries where less than a third of the population have an account at a formal financial institution (GSMA 2020). In many cases, the staggering rise in mobile money adoption benefited from the contemporaneous development of digital identities.

70. The Covid-19 pandemic highlighted the benefits of digital financial services but also the risk of leaving some behind. Digital financial services helped to keep financial systems functioning. However, not all were available to the poor and vulnerable. Countries must therefore invest in the broader infrastructure and design, and distribute services so they reach everyone (Pazarbasioglu and others 2020).

71. Even in the more successful cases of financial inclusion, new policy tradeoffs arise. Inclusion is not just the result of lower servicing costs, but also of lower risks and higher revenues from accessing and analyzing user data. Countries are thus increasingly aware of the need to regulate data use, storage, ownership, transfer, and localization, though doing so is not straightforward.

Climate Sustainability

72. The impact of digital money on climate is an increasing priority of member countries. Concerns emerge about the carbon footprint and energy needs of cryptoassets. For example, researchers at the Cambridge Centre for Alternative Finance estimate that 0.5 percent of total global electricity consumption is attributed to Bitcoin. Some DLT validation technologies (such as proof of work, as used in Bitcoin) are environmentally damaging. If not well managed, the proliferation of digital money may come with hidden environmental costs.

73. Policy responses are possible. The carbon footprint of specific digital monies should be evaluated. Methodologies to do so and reporting requirements should be standardized between countries. In addition, central banks evaluating CBDC could select technology providers also on the basis of environmental sustainability. However, guidance for how to do so is currently lacking.

Fiscal Policy Efficiency

74. Digital money is contributing to the push to modernize public financial management systems, in an effort to find fiscal space in a post-Covid environment. Many countries, especially in Sub-Saharan Africa, have accelerated and expanded their business-to-government and person-to-government payment platforms. This has opened new possibilities to automate tax collection and better monitor tax evasion. Some countries such as Bangladesh, Brazil, and Togo have also started to provide social benefits through mobile money to expedite and better target disbursement, and fight corruption. To be successful, these programs require sufficient local capacity, and still need to be studied more carefully so best practices can be identified.[3]

75. The macro-economic benefits of these transformations appear to be sizable. Al-Sadiq (2021) suggests that such moves also have growth impacts, such as by encouraging greater foreign

[3] Fiscal policy will more deeply be transformed by digitalization, beyond just digital money. The field of Govtech is rapidly evolving, with countries like Estonia leading the way. For example, in tax administrations digitalization is transforming IT strategies, data analytical capabilities, taxpayer e-services, system integrations, risk analysis, compliance improvement plans, case management systems, and big data techniques. Moreover, digitalization raises challenges with respect to tax design, such as the taxation of profits of highly digitalized businesses, VAT on cross-border e-commerce, and the taxation of the peer-to-peer economy.

direct investments. Ouedraogo and Sy (2020) also point to improved perception of tax officials and government corruption.

THE ROLE OF THE FUND—MANDATE, ACTIVITIES, AND IMPLEMENTATION

76. This section is divided into three parts. The first part describes the Fund's mandate and related focus. The point of doing so is to clarify areas of responsibility, so the Fund may efficiently coordinate and collaborate with other institutions, since only a globally concerted effort will be sufficient to tackle the complexity and interlinkages of the policy questions discussed above. The second part of this section proposes how the Fund would need to strengthen, widen, and deepen its products. On that basis, the third part offers an implementation plan based on hiring new resources and partnering with complementary organizations.

A. Mandate and Focus of Work

77. The Fund was established to "promote international monetary cooperation through a permanent institution which provides the machinery for consultation and collaboration on international monetary problems" (Article I of the IMF's Articles of Agreement).

78. Moreover, the Integrated Surveillance Decision (IMF 2012) provides that in its bilateral surveillance the Fund will examine those policies of a member that can significantly influence their present or prospective balance of payments and domestic stability. As such, exchange rate, monetary, fiscal, structural, and financial sector policies are subject to the Fund's bilateral surveillance mandate, and the impact of digitalization on these policies will need to be discussed, in addition to feedback effects on the IMS.

79. Indeed, the Fund has an obligation to oversee the IMS in order to ensure its effective operation (Article IV, Section 3(a)). As the design (or mis-design) of policies relative to digital money, and the degree of adoption affect virtually every element of the IMS, they also fall squarely under the Fund's multilateral surveillance mandate.

80. Similarly, one of the purposes of the Fund is to assist in the establishment of a multilateral system of payments in respect of current transactions between members and in the elimination of foreign exchange restrictions (Article 1(iv)). Again, the implications of digital money are of immediate relevance, since they can affect the Fund's role in facilitating payments and transfers for current international transactions and the related obligations of members, including

under Article VIII, Sections 2(a) and 3.[4] These questions are further related to the Fund's institutional view on capital flow management measures, and the work towards an integrated policy framework.

81. In accordance with this mandate, the Fund will need to focus on the policy implications of digital money for domestic and international economic and financial stability: specifically, members' domestic and balance of payment stability, as well as international economic and financial stability, and the stability and efficiency of the IMS.

82. This focus on policy implies not targeting other aspects of digital money adoption. Consistent with its mandate and expertise, the Fund would not concentrate on developing, testing, validating, or mainstreaming new technologies. It would strive to deeply understand technologies, but would build on this understanding primarily to provide more relevant, forward-leaning, and grounded policy advice (and consider how these technologies can benefit the Fund's own operations). Equally, the Fund would not work with a specific group of countries or regions, but aim to work with the entire membership and other stakeholders.

83. Moreover, the Fund would not devote resources to the many other potential policy implications outside its mandate. For instance, the Fund would tackle market contestability only in-so-far as it has implications for financial stability, while anti-trust agencies would focus much more squarely on the topic. Likewise, the Fund's interest in financial inclusion is anchored in implications for growth and financial stability (Sahay and others 2015 and Čihák and Sahay 2020). But the topic is clearly multifaceted, and also attracts the attention of development agencies.

B. Core Competencies and Main Activities

84. To foster domestic and international economic and financial stability following the adoption of digital money, the Fund can build on four core competencies:

- *Near universal membership,* offering an ideal platform to bring together ministries of finance and central banks to discuss spillover effects and issues close to national economic policy interests, to propose policy solutions targeted to the needs and capacity of all countries, to offer and develop a common vision for the IMS, and to foster a common understanding of corresponding design principles for digital money.
- *Core policy focus* on macroeconomic, macrofinancial, exchange rate, and spillover issues and their interconnections at the center of the IMS.

[4] For example, Article VIII, Section 2(a) prohibits Fund members from imposing, without Fund approval, restrictions on the making of payments and transfers for current international transactions. Article VIII, Section 3 does not allow members, without Fund approval, to engage in any discriminatory currency arrangements (of which bilateral payment arrangements that were common at the time the Fund was created are one example). While digital payments are supposed to facilitate rather than limit cross-border payments, the Fund and its membership would need to be mindful of these provisions.

- *Broad expertise*, bringing together economists, policymakers, technical and technology experts, and lawyers on common projects, reflecting the interconnected implications of digital money.
- *Unique ties to member countries* through surveillance and capacity development, which the Fund can leverage to spur open and constructive discussions on a bilateral, regional and global level, and to facilitate peer-to-peer learning and the sharing of policy lessons. Relative to many national authorities, the Fund can also more easily invite the private sector to take part in discussions on technology and partnerships.

85. To serve the needs and interests of member countries in the area of digital money, the Fund would need to adapt and strengthen its main activities. Ultimately, the Fund would aim to be an objective and constructive advisor in surveillance, and a trusted partner in capacity development. In support of that, the Fund would strive to be a thought leader in policy development. Finally, the Fund may need to ramp up its lending to help countries address balance of payments problems arising from their individual transitions, or other countries' transitions, to the widespread use of digital money.

Objective and Constructive Advisor in Surveillance

86. The 2019 IEO evaluation of the Fund's financial surveillance (IEO 2019) recommended, as the highest priority, to further strengthen financial and macrofinancial analysis in Article IV consultations. The rise of digital money makes this recommendation even more urgent. Likewise, a survey carried out for the Comprehensive Surveillance Review indicates that demand for the IMF's work on digital finance increased further during the Covid-19 crisis, especially among emerging markets.

87. Concretely, the Fund would:

- Cover issues stemming from digital money in all core areas of Article IV consultations including fiscal, monetary, exchange rate, and external stability assessments (target to cover one third to a half of countries in about 3 years, starting with the countries most impacted, one half to two thirds in 5 years, then gradually expand to all countries; numbers are roughly based on internal surveys of mission chiefs, while current coverage is very low);
- Pilot assessments of payment systems, including CBDC, and related risks in selected FSAPs (about 5 per year over the next 1–3 years, up from about 1-2 per year);
- Then more systematically introduce modules into FSAPs as experience is developed and international standards are established (transitioning to all FSAPs after 5 years);
- Expand and deepen coverage of digital money implications in the spillover and flagship products, emphasizing the inter-relations and tradeoffs between policy objectives; and
- Leverage and influence policy development work to ensure congruence with country needs that would guide policy and capacity development advice to countries.

Trusted Partner in Capacity Development

88. The Fund must contribute to narrowing the global digital divide. Such a divide is not just technological: some countries have access to infrastructure and are on the cutting edge of developments, while others are left behind. It is also about countries not having the capacity or voice to flag the potential inadequacy of foreign standards, regulate effectively, evaluate offers by private sector firms for new digital payment schemes, combat and protect themselves from digital risks such as cyber-attacks, and deal with policy spillovers such as to currency substitution.

89. A recent internal survey of capacity development departments points to clear expectations of growing demand for capacity development and training in the areas of CBDC, payment strategies, digital risk management, legal issues, regulatory and supervisory frameworks including AML/CFT, as well as privately-issued digital money, and digital strategies. The survey identifies these needs as arising in all member countries. The Fund must clearly be perceived as being open for business on digital money capacity development.

90. Concretely, the Fund would:

- Significantly ramp up capacity development and training, delivering around 50 missions per year from head-quarters and regional technical assistance centers by 3 years from now, then further increasing (this intermediate target represents about 1 percent of total IMF missions and is based on internal surveys of demand, and the number of countries ramping up work on analyzing CBDC, revising their payment strategies and regulations, and expressing concerns with cyber-security; the time horizon is shorter than for surveillance given rapidly increasing needs and the ability to leverage short-term experts; current missions are about 10 per year);
- Provide regional trainings and workshops (around 1 per quarter);
- Organize peer-to-peer learning networks, in collaboration with other international organizations, for member countries to discuss experiences, pitfalls, and lessons, and explore common solutions in well-defined and rapidly moving areas such as the design and policy implications of CBDC;
- Systematically compare cross-country experiences and help spread design and policy lessons of early adopters (such as the Bahamas, Canada, China, the Eastern Caribbean Currency Union, Estonia, Sweden, Singapore, Thailand, and the United Kingdom);
- Similarly, help countries collect and analyze data from their pilot projects to inform key policy questions; and
- Create and maintain a strong online presence, including via the IMF's web site and social media channels, consistently highlighting the Fund's work in the area of digital money, offering resources to the Fund's membership such as simple videos explaining key concepts.

Thought Leader in Policy Development

91. To provide policy advice through surveillance and build capacity in member countries, the Fund needs to enhance policy frameworks, develop policy lines, and build consensus across its membership. Policy development is the basis to provide relevant, innovative, and consistent policy advice and contributing to common global policy views. Fund staff must advance influential policy position papers, but also more concretely engage with policymakers in national authorities and international working groups, to emphasize policy tradeoffs and represent the interests of countries not present at the table.

92. The Fund has demonstrated its capacity to be a thought leader in some areas related to digital money. Its open-minded stance on CBDCs in 2018 contributed to a turning of the tide among policymakers. Its emphasis on public-private partnerships in 2019 steered policymakers towards more openly working with the private sector. Its insistence on the interests of lower-income and emerging market economies, and on more exploratory solutions to cross-border payments (a so-called multi-pronged approach), influenced the G20 Roadmap to enhance cross-border payments. And recent work on the legal underpinnings of CBDCs drew significant interest from central banks. However, while these contributions are encouraging, they are a mere drop in the bucket relative to the wide array of pressing policy questions noted earlier.

93. Concretely, the Fund would:

- Participate more actively in international working groups (about 10 in parallel—note that just the G20 Roadmap comprises 19) bringing together standard setters and other international organizations to craft common policy recommendations, develop and enhance standards where needed, and bolster legal and regulatory frameworks so they remain adequate given the deep transformations to services and service providers;
- Engage more deeply at the Executive Board level, including by discussing Board papers, to help form a common vision, explore solutions to common concerns, clarify guidance, and solicit feedback in this rapidly evolving area;
- Develop policy positions and analysis in support of surveillance, capacity development, and the global policy agenda and disseminate these internally through reference notes, and externally through Staff Discussion Notes and other channels;
- More actively coordinate work on digital money within the Fund, including with a lively seminar series to ensure lessons from policy and digital money pilots are rapidly absorbed;
- Overhaul, redesign, and more actively engage with the high-level advisory board to ensure it has a well-balanced, diverse set of thought leaders in the area of digital money, including policymakers, regulators, and entrepreneurs.

C. Implementation

94. This section comprises two parts. The first outlines resource needs to deliver on the above vision. The second discusses a concrete plan to hire new staff, and partner with key organizations in order to complement the resources and work of the Fund.

Resource Needs

95. The Fund must act swiftly, as ramping up capacity takes time. Also, strong network effects in the adoption of digital money means that design and regulation implemented by first-movers will be persistent. Currency substitution or fragmented payment systems could be difficult to unwind. Engaging on the right path from the beginning is thus essential.

96. To deliver on the above vision, the fund needs increased capacity, including dedicated resources. Rough calculations built from applying standard internal cost estimates to each of the above numerical output targets suggests between 50 and 75 staff and other experts in gross terms. Specifically:

Preliminary Resource Needs Estimate

Direct Country Engagement	
- Article IVs/FSAPs	20-30
- CD	15-25
Policy, Analytics and Intl Coordination	15-20

- Extending Article IV surveillance to 50 percent of countries and covering most FSAPs requires about 20-30 FTEs, and providing 50 CD missions per year and 4 broader CD engagements per year requires about 15-25 positions (including experts). As such, resources would be roughly split in equal parts between surveillance, capacity development, and policy development.

- This magnitude approximately corresponds to the Fund's current staffing for banking regulation and supervision, for instance (about 60 FTEs in MCM, with broader expertise Fund-wide). Data from other institutions and national authorities are harder to come by, but it is increasingly common to find new departments and innovation labs dedicated to digital money.

97. These initial estimates will be revised following a concrete costing exercise in line with the Board's guidance on this paper.

- Net resource needs calculations will also take into account the existing resource base (below) and potential synergies with existing workstreams and resources. In addition, the continuous and active training of staff will help meet work pressures over time.

- In this context, these calculations are separate from, but take into account, related work in the context of the Comprehensive Surveillance Review on closing existing gaps in macrofinancial surveillance and in the FSAP Review on reviewing gross needs.

- The precise allocation of resources across departments and activities to ensure tight collaboration as well as effective mainstreaming will need to be carefully considered in follow-up work to ensure balance between functional and area departments, and adequate surveillance capacity.

98. The allocation of resources to specific activities would vary over time, though the step-wise increase in total resources would remain essential well into the future. Resources would initially be slightly skewed towards policy development, to establish early policy lines and guide the policy debate before opportunities are missed, risks materialize, and network effects become entrenched. As policy lines are refined and digital money adoption rises, resources would increasingly shift to surveillance to ensure ample and robust capacity. In the meantime, capacity development would ramp up quickly and remain high to meet growing demand as technology and digital money solutions continue to progress. The mix of skills would be carefully managed over time to match these evolving priorities, through turnover and mobility. However, the complexity of the new questions, the overhaul of regulations, capacity, and infrastructure needed in many countries, and the continuing pace of technological change will require the step-wise increase in resources dedicated to digital money to remain place for the longer term.

Growth Plan: Hiring and Partnering

99. The Fund is not starting from scratch, but needs to expand resources significantly to successfully tackle the policy questions coming on stream. Currently only about 15 FTEs work on digital money related issues, mainly in MCM, ITD, LEG, RES, and SPR.

100. Some activities are ongoing, and while they are leaving their mark, they are inadequate to help a large number of countries tackle policy challenges from digital money proactively, comprehensively, and systematically. The Fund is engaged in capacity development in the areas of CBDC and payment strategies, occasionally assesses fintech-related risks in FSAP pilots (recently for Singapore and Switzerland), reviews digital money implications through Article IVs in an ad-hoc fashion in early adopters such as China, participates in various international working groups such as on enhancing cross-border payments though with insufficient capacity, and continues to advance innovative policy views.

101. Hiring new talent with deep knowledge and expertise is necessary, while existing staff will be trained in parallel as the topic is mainstreamed. The following 5 areas are relevant, though to varying degrees. However, a critical mass must exist in each area so staff can closely work together on the interlinkages between policy questions.

- Macroeconomists and policymakers with a focus on banking, market design, and international economics (noting that while the themes of the policy implications noted earlier are known, many of the specific questions are very new and of significant depth);

- Financial sector experts in the areas of payment systems, financial market infrastructures, and currency management, some with experience in private sector firms on the cutting edge of innovation;
- A small number of technology and digital risk experts focusing on DLT, networks, smart contracts and wallet design, artificial intelligence, big data, API programming, as well as digital risks including cybersecurity who will provide solid grounding to evaluate the effectiveness and feasibility of policy advice;
- Lawyers with particular expertise in monetary, central bank, payment system, financial, commercial, insolvency and tax law, AML/CFT frameworks, and legal aspects of the digitalization of money and payments; and
- Others, including data specialists and scientists able to collect and build new datasets relevant to the study of digital money, and communications experts able to help country authorities engage with their constituencies on digital money (to understand CBDC, build trust in digital payment systems, evaluate risks, or other).

102. Hiring a significant number of new staff comes with risks that will need to be managed. The main risk stems from the capacity to find, recruit, attract, and absorb new high-caliber and diverse talent into the organization. Growth would thus occur over several years, and opportunities to enlarge and galvanize the pool of potential hires would be sought, such as rotations of staff coming from other organizations or central banks.

103. But the Fund cannot just rely on internal resources to deliver on its mandate and help member countries; it must also closely partner with other organizations while minimizing overlap and duplication of work. The partnerships will leverage the core competencies and specific focus of each organization to ultimately strengthen policy guidance. In the end, all organizations and member countries gain.

104. Several organizations naturally emerge as key partners:

- The *BIS Innovation Hub* was established to "foster international collaboration on innovative financial technology within the central banking community." Its thus fills an essential void mostly in advanced and technologically savvy emerging market economies and offers considerable value by pooling expertise and fixed costs associated with research and development of public goods to enhance the global financial system. Staff of the BIS Innovation Hub could participate in IMF capacity development, while Fund staff could bring the needs of a wider membership to the attention of the Innovation Hub to help additional countries benefit from new products. Joint discussions of design principles for digital money or multilateral platforms would help unify feasibility and macrofinancial implications, and a jointly run peer-to-peer learning network would offer more complete and useful discussions.
- *The BIS* is also involved in important policy work related to digital money through a small yet productive and forward-looking team with close ties to member central banks. The Fund would offer access to a larger community of central banks also involved in exploring digital money, and

opportunities to collaborate on capacity development. Finally, in the area of policy development, more active debates and diversity of views would strengthen policy guidance given the field's novelty.

- *The Committee on Payments and Market Infrastructures (CPMI)* is a standard setting body active in the area of payments and digital money, and instrumental to reaching agreements on regulatory guidance and standards of interoperability. Its more technical work complements the Fund's focus. The Fund's active participation in CPMI work streams ensures that wider policy implications are recognized, and that the interests and capacity of countries outside the CPMI membership are also represented.
- *The Financial Stability Board (FSB)* focuses on financial stability implications of digital forms of money, and has been instrumental, for instance, in proposing guidance on regulating stablecoins. More recently, it has been tasked by the G20 to coordinate global efforts to improve cross-border payments, to jump-start work in an area deemed of particular policy priority. It has done so in close collaboration with the CPMI, IMF, and World Bank.
- *The World Bank* complements well the work of the Fund with its focus on development, financial inclusion, remittances, data collection, and the evolution of new technologies. World Bank and IMF experts are currently collaborating on ways to enhance the Bank-Fund FSAP program to account for new risks stemming from digital money adoption. Further collaboration in capacity development, especially in fragile states needing assistance on basic payment needs, would be important.

CONCLUSION

105. Rapid technological change, private sector innovation, evolving end-user needs and expectations, and country authorities eager to improve their services are pushing new digital forms of money onto center stage. The potential benefits are notable for all, although significant policy challenges are already evident and will grow. These range from narrow to broader implications for domestic economic and financial stability, to the stability and efficiency of the IMS. As country authorities step up, so must the Fund. Its mandate requires it to monitor, advise on, and in some cases guide this transition. The Fund is well positioned to do so given unique core competencies, and well-established activities including surveillance, capacity development, policy development, and lending. However, to tackle the jump in complexity and the pace of change of policy challenges, the Fund needs to rapidly increase resources and deepen its skills. Just as importantly, the Fund must strengthen partnerships with complementary organizations, while remaining committed to its mandate and to minimizing overlaps.

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