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Small States Matters

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Central Bank Digital Currencies: Big Tech in Small States

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1. Introduction

It didn't seem like a revolution. A botanical green smoothie and a snapper fish burger, in a Bahamas health-food café. But future generations might look back at this as a pivotal moment—the first national launch of a technology that could upend commercial banking.

(Wilson, 2020)

In October 2020, The Bahamas, a chain of islands home to fewer than 400,000 people, became the first country in the world to nationally launch a central bank digital currency (CBDC). With the humble purchase of a smoothie and a fish burger, the Sand Dollar, The Bahamas' CBDC, made history.

While countries such as Ecuador and Sweden had previously dabbled with digital currencies and cashless economies, those were isolated experiments that never fully took root, let alone spread to other countries. In Ecuador, a lack of public trust in the central bank meant that the take-up of accounts was low and 70 per cent of digital accounts were unused.

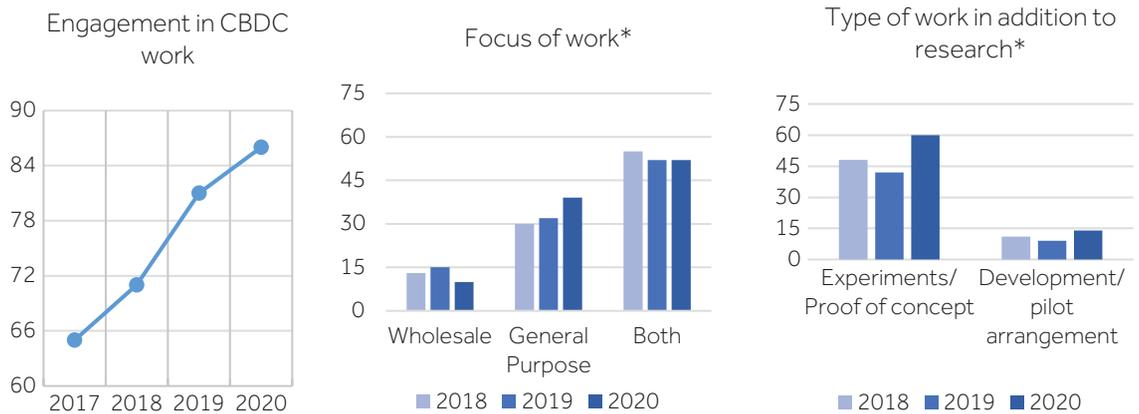
This time, countries' ventures into digital currencies seem different and momentum is widespread.

Interest in CBDCs has grown substantially in the last two years. A 2020 survey of central banks found that 86 per cent were engaged in investigating CBDCs—up from 65 per cent in 2017—and 60 per cent of those banks had progressed beyond conceptual research into experimentation and pilot

programmes (Boar and Wehrli, 2021) (see Figure 1). It is no surprise, then, that 2020 has been dubbed 'the year of CBDCs': the year in which the currency entered international financial policy discourse and the Sand Dollar, the world's first CBDC, was fully launched. And engagement with CBDCs continues to grow: in the first four months of 2021, at least three new countries—Jamaica, Bermuda and the United Kingdom—announced that they were exploring CBDCs for their own jurisdictions. Of 54 Commonwealth countries, 26 have announced intentions to either research, develop, pilot or launch CBDCs (see Annex A).

The impressive growth of this new technology inspires the question: *why are so many countries interested in CBDCs?* This paper seeks to understand both the drive behind CBDCs in general and why so many developing countries—small states in particular—are adopting them so quickly. Section 2 explores what CBDCs are and how they fit into the wider virtual and cryptocurrency landscape.

Figure 1. Percentage of central banks surveyed found to be working on CBDCs



*Share of respondents conducting work on CBDCs
 Source: Boar and Wehli (2021).

Section 3 examines the benefits that CBDCs can offer countries and the risks, which mean many central bankers remain cautious. Section 4 considers the drivers of CBDCs and unpacks why the technology might be such a good fit for small states, while section 5 considers some of the challenges that face them. Section 6 draws three key conclusions.

2. Mapping the digital currency landscape

Central bank digital currencies use an electronic record or digital token to represent, in virtual form, a country's fiat currency. The currency is issued and regulated by the central bank or relevant monetary authority.

Central bank digital currencies are largely divided into two types.

- **Wholesale CBDCs** are restricted to use by financial institutions only and are digital settlement tokens for wholesale payment applications.
- **Retail CBDCs** are widely available to anyone and are targeted at retail transactions.

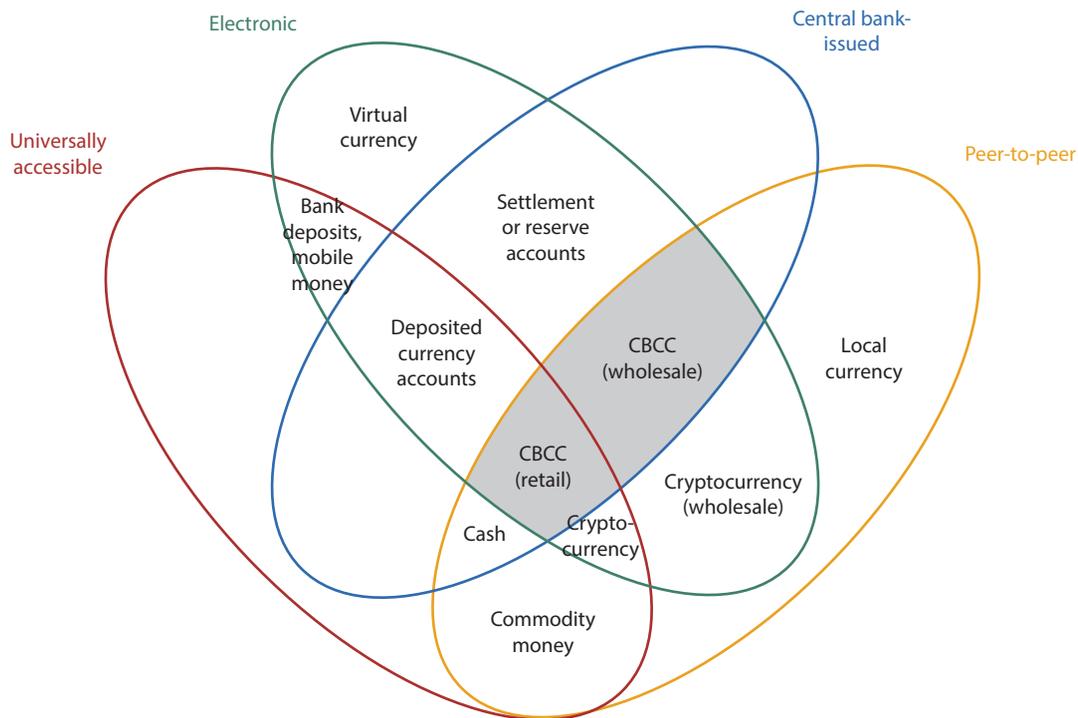
The 'money flower' drawn by Bech and Garratt (2017)—a taxonomy of money—is helpful in understanding CBDCs and how they relate to other forms of money. Retail CBDCs lie in the 'sweet spot' of the money flower, combining the accessibility of cash, the digital ease of mobile

money, the security of cryptocurrency and the authority that comes from their being issued by the central bank (see Figure 2).

While CBDCs had been proposed as far back as the 1980s (Tobin, 1987), few central bankers took them seriously until fairly recently. The declining use of cash in many advanced economies and the popularity of Bitcoin and other cryptocurrencies have been major factors in the rise of CBDCs. Bitcoin was created in 2009 as a response to the 2007/08 global financial crisis and the ensuing mistrust of traditional banks. Its use and value has risen significantly since then, such that while Bitcoin initially dominated the cryptocurrency market, it now competes with dozens of cryptocurrencies, including Ethereum, Litecoin and Dogecoin.

Notwithstanding Bitcoin's popularity, it was Facebook's announcement in June 2019 of plans to launch a cryptocurrency called Libra (now renamed Diem) that proved to be a tipping point for CBDCs. Leveraging the social media platform's extensive global reach of more than 2.7 billion active users, Libra was considered a credible threat to central banks' financial control and stability. Benoit Coeure, head of the Innovation Hub at the Bank for International Settlements (BIS), noted that Libra's global network would make it 'possible to ensure transfers from one place to another without going through the central bank settlement

Figure 2. The money flower—a taxonomy of money



Source: Bech and Garratt (2017).

systems' (Palmer, 2020). He cautioned that 'the emergence of closed payment channels dominated by tech giants poses risks for both competition and data protection' and noted that central banks 'must move forward on digital currencies, which are part of the solution' (ibid.).

A growing number of countries have moved to curtail the use and trade of cryptocurrencies in their jurisdictions. Notably, both China and India have issued warnings against the trade in cryptocurrencies, with India set to propose an outright ban, and both countries are considering issuing their own CBDCs. China was among the first countries to pilot a CBDC and testing of its digital yuan is still ongoing in a number of large cities, including Shenzhen and Chengdu.

While they share some similarities, Box 1 sets out some of the crucial differences between cryptocurrencies and CBDCs.

The COVID-19 pandemic also accelerated the pace of movement on CBDCs. A fear of exposure to the virus via contaminated physical cash drove increased use of contactless

payments. Additionally, the pandemic meant that governments needed to disburse large sums of stimulus money to people quickly and effectively. These issues further underscored the already growing motivation to develop CBDCs. For example, the United States Congress considered using a digital dollar, instead of transfers or costly paper cheques, to make government-to-citizen payments in its first round of stimulus payments.

3. The benefits and risks of CBDCs

In addition to understanding what a CBDC is and the exogenous factors driving its development, it is important also to understand what benefits and risks CBDCs present.

While it may be easy to argue that CBDCs are a response to cryptocurrencies, this view is too simplistic. Such currencies offer a range of potential benefits that attract central banks. In a review of the existing literature on CBDCs, Kiff and colleagues (2020) compiled a list of seven such benefits.

Box 1. Cryptocurrencies vs CBDCs

With so much niche terminology being used, it is often difficult to know your Bitcoin from your Britcoin—the nickname given to the Bank of England’s proposed CBDC. The following are some key differences and similarities between cryptocurrencies and CBDCs.

CONTROL
While *CBDCs* are under the control of central banks, *cryptocurrencies* were specifically designed to be decentralised, with no single entity able to exert control over them.



TECHNOLOGY USED
There can be many technological similarities between *CBDCs* and *cryptocurrencies*. Both Bitcoin (a *cryptocurrency*) and the East Caribbean Central Bank’s DCash (a *CBDC*) employ blockchain technology. Technology type is a design choice made by the currency’s founders.

PRIVACY
Data privacy is a key feature of a *cryptocurrency*, with users able to decide what data, if any, is shared. With *CBDCs*, regulators see large portions of data.



BACKING
Central bank reserves back *CBDCs*; the picture for *cryptocurrencies* is less clear. Some, such as Bitcoin, are not tied to any asset or legal tender, so their value fluctuates wildly with supply and demand. Others, known as stablecoins, are tied to a fiat currency, a *cryptocurrency*, a commodity or an algorithm that smooths the price volatility.

- **Central bank digital currencies enhance payment system competition, efficiency and resilience.** Because payment systems derive much of their value from a large user base, allowing them to benefit from economies of scale and scope, payment systems tend to be dominated by a small number of private companies. Kiff and colleagues (2020) note that *CBDCs* can reduce monopolistic tendencies and concentration risks in payment systems.
- **They improve financial inclusion, especially in countries with underdeveloped financial systems and many unbanked citizens.** In remote or rural areas where physical banking infrastructure (buildings, ATMs, etc.) may

be damaged or non-existent, banks may not have the financial incentive to offer or repair services, leaving that segment of the population unserved. In areas such as these, where financial exclusion is driven by a lack of access to services, *CBDCs* may boost financial inclusion by underpinning digitised financial services that do not require the same physical infrastructure but only a mobile phone and signal.

- **They improve the effectiveness of monetary policy by facilitating more targeted policy or more granular payment flow data to enhance macroeconomic projections.** Central bank digital currencies allow governments to make direct transfers

to user accounts (Davoodalhosseini et al., 2020), or to 'helicopter drop' monetary stimulus after a natural disaster or public health crisis (Bartsch et al., 2019). They might also increase money velocity by incentivising specific types of spending (Copic and Franke, 2020). For example, 'cashback' payments could be made on purchases from local merchants and/or certain industries; alternatively, CBDC holdings could be subject to a fee to incentivise people to spend them quickly.

Bergara and Ponce (2018) note that CBDCs allow central banks access to real-time and more granular contextual payment metadata that can inform and thereby enhance monetary policy formulation and macroeconomic projections. The ability to observe an economy's response to shocks or policy measures in near-real time would be very valuable for policy-makers (Burgos and Batavia, 2018).

- **An interest-bearing CBDC could enhance the transmission of monetary policy by increasing the economy's response to changes in the policy rate.** Several authors have argued that regulators could set interest rates (including negative interest rates) on CBDCs to discourage the use of cash and to implement other policy objectives (Rogoff, 2014; Bordo and Levin, 2018; Agarwal and Kimball, 2016). The public may criticise negative interest rates, however, and the approach could undermine confidence in central banks (Mersch, 2020).
- **They reduce or prevent the adoption of privately issued digital currencies, which may threaten monetary sovereignty and financial stability, and can be difficult to supervise and regulate.** The rise of private cryptocurrencies, such as Dogecoin, Bitcoin and Diem, could threaten monetary sovereignty by accelerating currency substitution (e.g., dollarisation). They could also undermine financial stability by displacing commercial bank deposits, reducing banks' sources of funding and hence their ability to provide credit to the economy (Diez de los

Rios and Zhu, 2020; FSB, 2020). Furthermore, these global cryptocurrencies can be difficult to supervise and/or regulate (Feyen et al., 2020). Central bank digital currencies offer an alternative to private currencies and might ensure that public money remains a relevant unit of account (Brunnermeier et al., 2019).

- **They improve the traction of local currency in jurisdictions attempting to reduce dollarisation.** Central bank digital currencies could support local currency as a means of payment, particularly where the currency helps to improve financial inclusion and makes financial services accessible to more people. Kiff and colleagues (2020) note, however, that CBDCs alone cannot address the root causes of dollarisation nor change the attractiveness of foreign currency as a store of value, particularly where residents have lost trust in their local currency.
- **Central bank digital currencies could play a role in distributing fiscal stimulus to unbanked and other recipients.** In 2020, the US House of Representatives considered legislating to create a 'digital dollar' that would allow the government to deliver stimulus payments to unbanked Americans. Under the proposal, the Internal Revenue Service (IRS) would have been able to make payments by direct deposit to recipients' bank accounts or into 'digital dollar wallets', where the IRS had enough information to create them. The proposal was, however, excluded from the final version of the Bill.

Kiff and colleagues (2020) also identify some of the risks associated with CBDCs, as follows.

- **Central bank digital currencies can affect monetary policy transmission by changing the demand for cash and altering the sensitivity of demand for money to changes in interest rates.**
- **Like cryptocurrencies, interest-bearing CBDCs have the potential to destabilise the financial system by competing with commercial bank deposits and thus disintermediating banks.**

Disintermediation in commercial banks could have potentially serious consequences, including runs on banks and increased central bank lending to distressed commercial banks. Many researchers have proposed ways of minimising the risks, however, including forgoing interest payments or creating an adjustable interest rate, limiting the size or number of payments (Panetta, 2018) or having a 'waterfall' account into which any payments over the cap would automatically be transferred (Bindseil, 2020; CBOB, 2019). Mancini-Griffoli and colleagues (2018) add that the presence of deposit insurance should prevent CBDC-induced runs on banks.

Ultimately, the ability of a country to capitalise on the benefits or the likelihood that it will experience the risks of a CBDC depend on its economic context, the design of the currency and the parameters put in place for its use. Given that very few banks have implemented such a currency, it is difficult to estimate the likelihood that either the benefits or the risks will materialise.

4. Drivers of CBDCs and why small states are leading the way

Despite the pull of the benefits from CBDCs and the push from the threat posed by cryptocurrencies, some countries have been much quicker than others to embrace CBDCs. The context of those countries that are adopting CBDCs is important. Auer and colleagues (2020) note that there are some common economic and institutional drivers that explain why particular countries have embarked on CBDC projects. They argue that factors such as digital infrastructure, innovation capacity and institutional quality impact a country's technical ability to adopt a CBDC, while demand is driven by factors such as economic development, financial inclusion, public interest in CBDCs and cross-border transactions. Auer and colleagues (2020) find that CBDCs are more likely to be considered in those countries in which there is widespread use of mobile phones and high innovation capacity. Additionally, retail CBDCs are more likely to progress in jurisdictions with high innovation capacity and a large informal economy.

While this analysis of country factors is important, it does not tell the whole story about small states. Yes, many small states have high rates of mobile phone penetration¹ and a large informal economy, but the same is true of several other developing countries. Similarly, small states are no more likely to have the required digital infrastructure and innovation capacity than larger advanced economies. Yet small states have been the first movers in the rollout of CBDCs.

This paper argues that the following five characteristics of small states make them more likely to benefit from CBDCs and less likely to experience the risks.

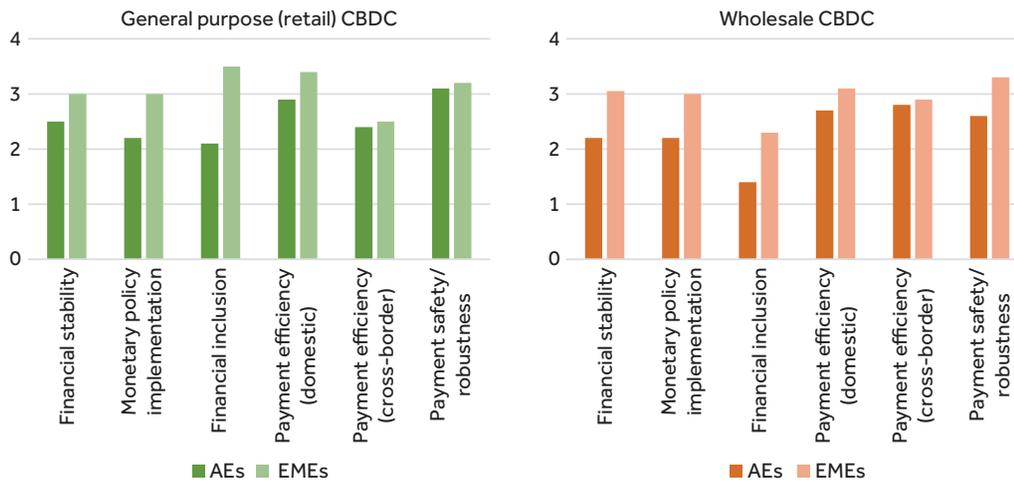
Varying financial inclusion rates

In a survey of 65 central banks, Boar and Wehrli (2021) found the main motivations for CBDCs to be payments safety and domestic payments efficiency, with financial inclusion a particularly important factor for emerging market economies looking to issue retail CBDCs (see Figure 3). While official statistics on financial inclusion in small states are scant, we know that it remains a challenge in many. Research by Allen and colleagues (2016) suggests that financial inclusion is associated with lower account costs and greater proximity to financial institutions.² In small states whose populations are spread unevenly across many islands, few have easy access to banks. Furthermore, should a natural disaster strike, even those inhabiting islands with bank branches may find themselves unable to access services. When Hurricane Dorian hit The Bahamas in September 2019, the islands of Grand Bahama and Abaco were without banking services for weeks. Indeed, the Central Bank of

1 Sixty-eight per cent of small states have mobile cellular subscriptions of 95 or more per 100 people compared to 66 per cent of larger countries. Furthermore, the small state average is 109.5 subscriptions per 100 people, while the non-small state average is 106.9 subscriptions per 100 people. Source: World Bank Development indicators, year 2017.

2 They also find that greater financial inclusion is associated with stronger legal rights and more politically stable environments.

Figure 3. Average importance of motivations for issuing a CBDC



1 = not so important; 2 = somewhat important; 3 = important; 4 = very important
 Source: Auer et al. (2020).

The Bahamas has stated that increasing financial inclusion was a key motivation for implementing the Sand Dollar.

Threat of de-risking

In addition to the geographic challenges that hinder financial access, financial services in small states have been threatened by de-risking and the subsequent withdrawal of some global banks. Since the 2007/08 global financial crisis, a number of banks in the Caribbean and Pacific have lost correspondent banking relationships, which has negatively affected economies in the region. Between 2016 and 2017 in particular, major global banks terminated accounts and a number of them increased fees. These de-risking practices threaten financial inclusion goals in small states and further incentivise the need to develop alternative payment options. Many small states are looking at solutions led by financial technology (fintech) to address this challenge. Ramachandran and Rehmann (2017) assert that blockchain technology can help with de-risking by reducing the regulatory compliance costs associated with 'Know Your Customer' (KYC) requirements and by increasing the transparency of transactions. These actions should help to de-risk financial institutions and also reduce the costs of remittances for

senders and recipients, the costs to businesses needing trade finance and the costs to charities operating in conflict areas. More specifically, IMD (2020) argues that CBDCs minimise risk in the financial system because authorities, rather than banks, can monitor the flow of the funds.

Costly domestic financial markets

Many small states have small domestic markets with relatively small financial sectors serviced by few banks and other financial institutions. With small populations, narrow production bases and a high dependence on imports, there are often high transaction costs to banking. Jahan and colleagues (2019) highlights the high interest-rate spreads in Pacific island states compared to those of other middle-income countries in the region. These high costs restrict access to credit for both households and businesses alike. Allen and colleagues (2016) show that the cost of banking is more likely to be reported as a barrier in countries where maintaining an account is more costly – perhaps like small states where the cost of living is high and commercial accounts can be expensive. Additionally, small states' high vulnerability to natural disasters increases the perceived risk premium associated with doing business in these economies and further raises costs.

Small private sectors

The challenges of a small private sector are another reason why small states in particular are turning to CBDCs. Larger Commonwealth states such as Kenya have successfully increased financial inclusion rates by means of mobile money solutions. With only relatively small private-sector markets and consumer bases, however, it is unlikely that a similar option would work effectively in small states. On balance, there is little incentive for incumbent traditional banks in small states to increase financial inclusion, particularly for residents in sparsely populated islands. Likewise, it is also difficult for fintech start-ups to break into the domestic market and address the issue without government support: the start-up costs of serving a small consumer base are likely to be prohibitive. Thus public-sector intervention is required to help small states to capitalise on the benefits of fintech. Regulator-driven CBDCs are likely the only way in which small states can access fintech solutions to address the problems of financial exclusion and de-risking.

Geographic advantage

Because of the island nature of many small states, they are able to conduct controlled, self-contained pilots to safely test the design choices and the risks of adopting a CBDC in a way that many larger countries may not. The Bahamas tested the Sand Dollar for several months on two different islands before rolling it out nationally. The risk of commercial bank disintermediation has not materialised. Similarly, the Eastern Caribbean Central Bank is testing its digital currency DCash in four of the seven countries in its jurisdiction. Mauritius, the Marshall Islands, Curacao and Bermuda are all also looking into CBDCs.

5. Challenges specific to small states

Having explored why CBDCs are a good fit for small states' specific contexts, it is worth considering whether the introduction of CBDCs may present any challenges for those economies. While it is too early to say for sure

what the impact will be, there are some features of small states' economies that may limit the benefits of CBDCs.

Natural disasters and connectivity challenges

Small states—particularly small island states—are disproportionately vulnerable to natural disasters, such as tropical storms and hurricanes. In a study of 24 small states, the International Monetary Fund (IMF) found that more than a third of the sample were at significant risk from climate change and natural disasters, compared to only a quarter of other countries (IMF, 2016). This risk is worsened by the increased frequency and intensity of natural disasters across the globe in the past 50 years (Laframboise and Acevedo, 2014; IMF, 2016). It remains to be seen whether the connectivity infrastructure required for CBDCs is able to withstand the potential damage done by natural disasters.

Open economies with fixed exchange rates

Several studies have noted that small states are significantly more open to trade because they have bigger trade-to-gross domestic product (GDP) ratios than their larger counterparts (Krasner, 1976; Easterly and Kraay, 1999; Jahan and Wang, 2013; Nurse, 2016). They tend to be highly dependent on strategic imports such as food and fuel. In addition to this openness (or perhaps because of it), small states are more likely to have fixed currency exchange rates. In fact, 62 per cent of all pegged currency exchange rates are found among small states.

How might the introduction of CBDCs impact open economies with fixed exchange rates? If CBDCs were to substantially increase the money supply, the exchange rate would depreciate, putting pressure on foreign reserves to maintain the fixed rate. Additionally, the potential monetary policy benefits of CBDCs highlighted in section 3 of this paper (improving the effectiveness of monetary policy and enhancing its transmission) would be tempered by the overriding objective of exchange-rate maintenance.

Trust is key

The success of CBDCs will rely on both consumers and businesses participating in the venture by holding accounts and accepting CBDC payments, respectively. Ecuador's electronic money failed after four short years because account take-up was poor: 70 per cent of electronic accounts remained unused, because the public trusted neither the government nor the central bank. The project was consequently ineffective and had no impact on the economy. Central banks in small states will need to safeguard their reputations fiercely and ensure that they maintain public confidence if their CBDCs are to succeed and realise their development potential. Importantly, strong and effective cybersecurity will be critical to maintaining trust—and these are not issues specific to small states. Any country looking to introduce a CBDC will have to pay careful attention to these issues.

6. Conclusions

Recently, it has seemed as though a new country declares its intention to create a CBDC every month or so. Indeed, the latest announcement is that of the Bank of England (the United Kingdom's central bank) that it is charging a taskforce with looking into a CBDC—colloquially dubbed 'Bitcoin'. As more of the larger economies issue digital currencies, the achievement of the Sand Dollar—of the humble purchase of a fish burger and a green smoothie—will probably soon be overshadowed. But there are three key lessons that we should take away from the small states' experience as first movers in the CBDC space.

Small states matter

In much of the early literature on CBDCs, there is no mention of small states. Many of the surveys of central bank attitudes to CBDCs overlooked them—until The Bahamas rolled out its Sand Dollar. While it can be argued that small states are often excluded from studies because there is little or no data on them, it can equally be argued that there is no data because no one asks for it. Small states' bold

action in the CBDC space suggests that they have important lessons to share, and more effort should be made to include them not only in studies and data analyses but also in policy discussions.

Context is critical

The ways in which the contexts of small states have supported their development of CBDCs also sheds light on the importance of context to other areas. Consider the example of international financial regulation. For many years, small states have been labelled tax havens and have been blacklisted or grey-listed by international regulators. Small states are consistently chasing regulatory standards, while trying to keep their international financial sectors competitive. They have long argued that the international financial regulatory architecture neither understands nor responds to the many important nuances of the small state context. Their environmental and economic circumstances are often different from those of larger countries in ways that create recurring development challenges.

Fit-for-purpose fintech

The final lesson we can learn from this analysis is that fintech must be fit for purpose. Fintech solutions work best when they are tailored to meet country-specific needs. Small states have recognised that CBDCs suit their peculiar set of challenges; it is entirely possible that larger developed countries with high rates of financial inclusion are less likely to experience the same benefits.

Like so many things, fintech is effective when it is adopted not for its own sake but because it is a solution to a specific problem.

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Annex 1. CBDCs in the Commonwealth

Region/Country	CBDC status	Notes (with date of and link to last report)
AFRICA		
Ghana	In development	Development of the e-Cedi is advanced and the Bank of Ghana will implement it shortly, then run a pilot (June 2021).
Kenya	Research stage	The Central Bank of Kenya is in discussions exploring how CBDCs might help the Bank to achieve its mandate (Oct. 2020).
eSwatini	Research stage	The first of three research phases into CBDCs in Eswatini has been completed (Aug. 2020).
Mauritius	Research stage	Research is near complete and Mauritius is looking to pilot its CBDC at the end of 2021 (May 2021).
Rwanda	Research stage	The Central Bank of Rwanda is researching the economic, financial and technical aspects of CBDCs, as well as 'the operationalisation model' (June 2021).
South Africa	Research stage	The South African Reserve Bank is conducting a feasibility study for a general-purpose retail CBDC, which is expected to conclude in 2022 (May 2021).
ASIA		
India	Exploratory research	The Reserve Bank of India is researching the pros and cons of CBDCs (Mar. 2021).
Malaysia	Exploratory research	Bank Negara Malaysia has no immediate plans to develop a CBDC but will monitor the situation (Mar. 2021).
Pakistan	Research stage	The State Bank of Pakistan is carefully studying CBDCs (Apr. 2021).
Singapore	In development	The Monetary Authority of Singapore is exploring a cross-border wholesale CBDC that could challenge SWIFT (June 2021).
CARIBBEAN		
Antigua & Barbuda; Dominica; Grenada; Saint Lucia; St Kitts a Nevis; St Vincent & Grenadines	Pilot launched	The Eastern Caribbean Central Bank has launched a CBDC pilot, DCash (Apr. 2021).
Bahamas, The	Launched	The Bahamas has launched Sand Dollar, the world's first CBDC (Oct. 2020).
Canada	Exploratory research	The Bank of Canada does not currently see a strong case for issuing a CBDC but will monitor the situation (May 2021).
Jamaica	Pilot	The Bank of Jamaica will pilot a CBDC from May to December 2021 (Mar. 2021).

Trinidad & Tobago	Exploratory research	The Central Bank of Trinidad and Tobago is exploring the feasibility of a CBDC (June 2021).
EUROPE		
Cyprus; Malta	Research stage	The European Central Bank held public consultations on the potential of a European CBDC and the Governor of the Bank hopes to launch by 2025 (Mar. 2021).
United Kingdom	Research stage	The UK government has established a joint taskforce between HM Treasury and the Bank of England to co-ordinate exploratory work on a potential CBDC (Apr. 2021).
PACIFIC		
Australia	Research stage	The Australian Central Bank is exploring the possible use and implications of a wholesale CBDC using distributed ledger technology (DLT) (Nov. 2020).
New Zealand	Exploratory research	The Reserve Bank of New Zealand has 'no imminent plans' to issue a CBDC but remains open-minded about further progress in money and payment technologies and has actively engaged in CBDC research (Oct. 2020).
Tonga	Exploratory research	The Reserve Bank of Tonga has advised that its consideration of a CBDC is still in a very exploratory phase, seeking to determine whether it is suitable for introduction a small island economy such as Tonga (June 2021).