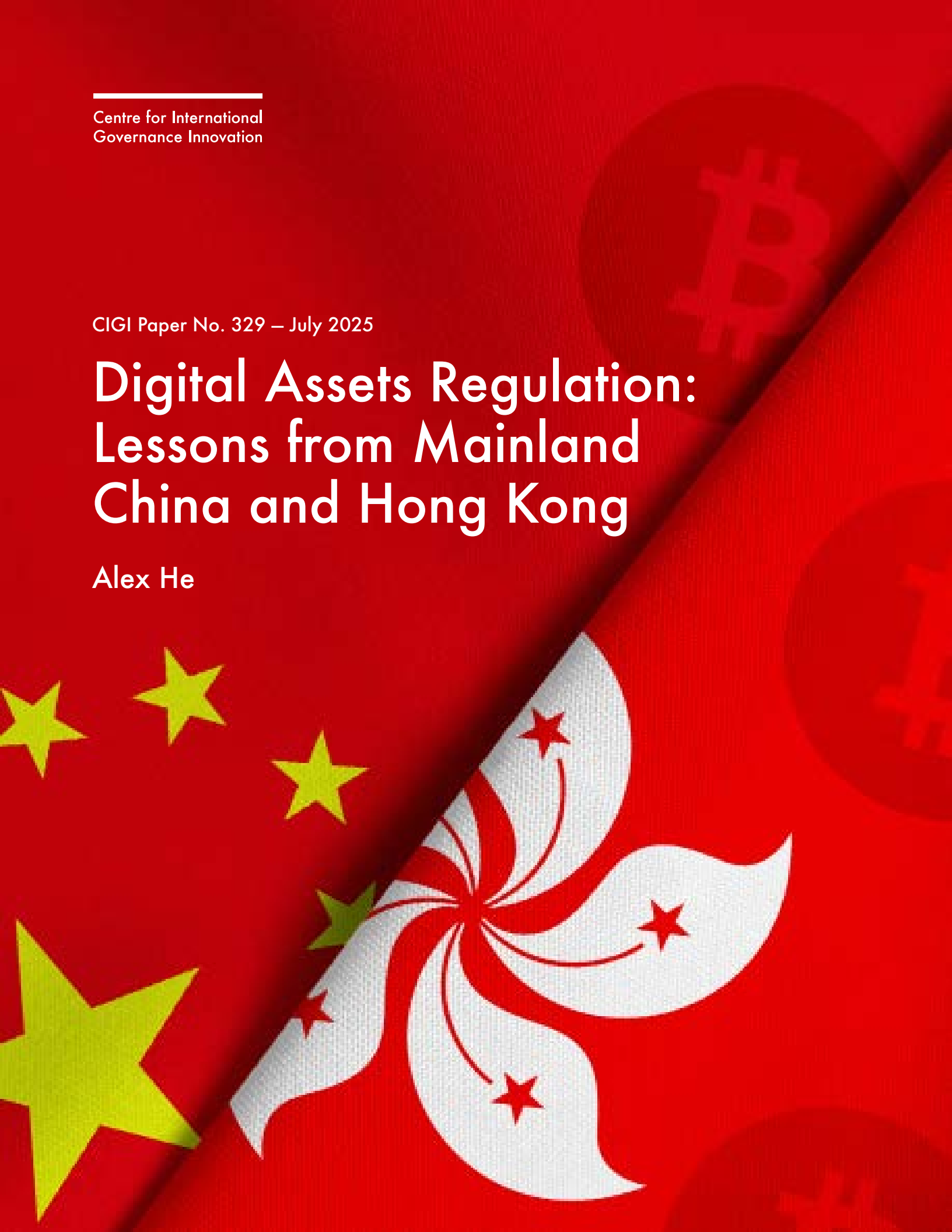
Centre for International
Governance Innovation

CIGI Paper No. 329 – July 2025

Digital Assets Regulation: Lessons from Mainland China and Hong Kong

Alex He



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Acronyms and Abbreviations

BIS	Bank for International Settlements
BRICS	Brazil, Russia, India, China and South Africa
CBDCs	central bank digital currencies
CCE	Commissioner of Customs and Excise
DLT	distributed ledger technology
e-CNY	digital yuan
ETFs	exchange-traded funds
FRS	fiat-referenced stablecoin
FSTB	Financial Services and the Treasury Bureau
G20	Group of Twenty
HKMA	Hong Kong Monetary Authority
OTC	over the counter
PBOC	People's Bank of China
RMB	renminbi
SFC	Securities and Futures Commission
SWIFT	Society for Worldwide Interbank Financial Telecommunication
VAs	virtual assets
VASPs	virtual asset service providers
VATPs	virtual asset trading platforms
wCBDC	wholesale central bank digital currency

Executive Summary

This paper focuses on the development of digital assets and distributed ledger technology (DLT), such as blockchain, as well as regulatory models in accordance with these developments in both mainland China and Hong Kong. China has trialled its central bank digital currencies (CBDCs) program but has imposed strict regulations on cryptocurrencies since 2017. It has completely banned the trading and mining of cryptocurrencies since 2021. In contrast, Hong Kong has adopted an open and inclusive policy toward virtual assets (VAs), establishing mechanisms and arrangements to regulate VA trading. The paper examines the context and specific reasons behind the different considerations and policies toward the development of digital assets, as well as the latest developments and regulatory policies in both mainland China and Hong Kong. It concludes by exploring broader lessons that can be learned from the regulatory practices in both regions, including emerging alternative international payment systems and their impact on the de-dollarization trend; the influence of Hong Kong's latest VA regulations, particularly the passage of the Stablecoins Bill on mainland China's potential issuance of offshore renminbi (RMB) stablecoins and its possible revisiting of the cryptocurrency ban; and the global development of tokenized assets transactions.

Introduction

The development of DLTs, such as blockchain, is driving significant growth in the global digital assets market. Popular forms of digital assets include, but are not limited to, CBDCs, cryptocurrencies, stablecoins and more. In the United States, the crypto-friendly second Trump administration issued an executive order titled "Strengthening American Leadership in Digital Financial Technology" on January 23, 2025, during its first week in office. The order explicitly revoked President Joe Biden's executive order on "Ensuring Responsible Development of Digital Assets," which had been issued in March 2022 and aimed to mitigate the risks and potential financial instability posed by the development of digital assets both within the United States and globally. This move marked a fundamental shift in US government policy on digital assets — from a risk-prevention-first approach to a development-first strategy. Beyond the United States, there has been considerable innovation in the digital assets space, including in East Asia, India, the Middle East and other regions. While mainland China remains one of the few economies piloting a retail CBDC and continues to ban cryptocurrency transactions within its borders, Hong Kong has adopted an open and inclusive approach to VA development.

Given these new dynamics, especially the anticipated more favourable regulatory environment for cryptocurrency development in the United States over the next four years, China has increasingly recognized the great potential of digital assets to support the broader digital economy. Although the predominant stance in China is still to ban cryptocurrency transactions due to concerns about capital flight, money laundering, fraud and other financial crimes, owning crypto-assets remains a legal grey area in mainland China despite the official ban on cryptocurrency transactions. People are still able to trade tokens such as bitcoin through overseas trading platforms and bank accounts. Some scholars (Huang 2022) and former policy makers (G. Zhu 2024) have raised pre-emptive suggestions to prepare for significant changes in the global cryptocurrency landscape. More importantly, China should embrace the implications of cryptocurrencies and new digital technologies, including tokenization and DLTs such as blockchain, for the development of what is called a "new type of productivity," the digital economy and overall economic growth.

The paper begins with a brief summary of China's digital yuan, or e-CNY, pilot program, including its main objectives and recent developments. This is followed by a discussion of the strict regulations on cryptocurrencies and the reasons behind these policies. The subsequent section examines the latest developments in China's cryptocurrency market under the complete ban on cryptocurrency transactions. Next, the paper outlines the evolution of regulatory policies and the latest developments in the crypto-assets market in Hong Kong. Finally, the paper discusses the implications of the digital asset regulations and developments in both mainland China and Hong Kong, focusing on the potential for alternative

international payment systems, such as the mBridge project and BRICS Pay; the impact of Hong Kong's recent VA regulatory development — especially the enactment of the Stablecoins Bill — on mainland China's potential launch of offshore RMB stablecoins and re-evaluation of the existing cryptocurrency ban; and new trends in the tokenized assets transactions market.

Regulatory Framework and Development of Digital Currency in Mainland China

China's Digital Yuan Pilot Program and Cryptocurrencies Ban

The objectives and motivations behind the digital yuan pilot program, as stated by the People's Bank of China (PBOC), included improving the efficiency of currency issuance, optimizing the RMB's payment functions, facilitating financial inclusion and enhancing the integration of the RMB retail payment system. Additionally, the program aimed to explore ways to improve cross-border payments (PBOC 2021).

Looking deeper into the background of the PBOC's decision to research and issue the digital yuan, these specific goals can be paraphrased as follows. The PBOC needs to dominate the rapidly growing digital retail payment system in the digital economy to provide a secure, inclusive digital retail payment infrastructure (ibid.). At the time, Alipay and WeChat Pay, two private platforms, had dominated the third-party payment system. Under China's digital yuan pilot program, Alipay and WeChat Pay are to be incorporated into the digital yuan payment system. Alongside major state-owned commercial banks and large telecom operators — both serving as authorized intermediaries for circulating and managing e-CNY retail — these two leading private payment platforms also act as authorized intermediaries, constituting a crucial part of the e-CNY payment infrastructure (He 2021).[1] By integrating the existing private payment systems into a digital yuan-dominated RMB retail digital payment system, the PBOC can regain control of the system and the huge amounts of data generated within the retail payment ecosystem, while also setting a precedent for placing the future development of digital assets under state control.

Another significant reason for the PBOC's initiative to research and to issue the digital yuan program, as mentioned in its white paper, was the concern over the potential negative impact of global stablecoins such as Facebook's (now Meta's) Libra (now Diem) and cryptocurrencies such as bitcoin. According to a central bank official, it was a measure "against the invasion of cryptocurrency and Libra [to] prevent the power of currency issuing from falling into the hands of others" (ibid., 7). The overlapping timelines of the digital yuan's introduction and the banning of cryptocurrency in China (see Table 1) suggest that the rise of the e-CNY was accompanied by increasing crackdowns on decentralized cryptocurrency.

One clear indication was that the PBOC (2019) listed accelerating e-CNY trials in China as a priority at its working meeting in the second half of 2019, just two months after Facebook announced its plan to develop the Libra blockchain currency in June of that year. The central bank's initiative could be seen as a precautionary measure to maintain currency sovereignty and financial stability. It was also a pre-emptive move by the PBOC to take a strategic high ground in the global CBDC competition, especially as other central banks around the world were trialling their own CBDCs.

The reason for banning cryptocurrency is primarily to stabilize the financial order, specifically to prevent capital flight, financial fraud, money laundering and other online crimes. The ban is also motivated by concerns over the high energy consumption associated with bitcoin and other cryptocurrency mining operations. Additionally, since the launch of digital RMB research in 2014, the cryptocurrency ban has helped ensure the exclusive development of the digital RMB. A major milestone occurred in December 2017, when the Chinese central government approved the research, development and trialling of the digital yuan — just three months after China effectively banned

1 See also https://finance.sina.cn/2020-10-26/detail-iiznctkc7620004.d.html.

Table 1: Overlapping Timelines of the PBOC's E-CNY Pilot Program and Cryptocurrency Ban

Timelines	E-CNY Pilot Program	Ban on Cryptocurrency
December 3, 2013		The "Notice on Preventing the Risks of Bitcoins" stated that bitcoins are virtual goods rather than real currency, with no legal status, and prohibited financial institutions and non-financial payment platforms from handling transactions involving bitcoins — while still allowing registered platforms to continue cryptocurrency transactions.
2014	Establishment of research group on digital fiat currency	
2016	Establishing Digital Currency Institute and finishing original system set-up for digital fiat currency	
September 4, 2017		The "Notice on Preventing the Risk of Initial Coin Offering" banned initial coin offerings by defining them as unauthorized and illegal public fundraising activities. It also prohibited transactions on cryptocurrency trading platforms and pushed them to relocate outside China.
December 2017	Beginning the organization of business institutions to conduct research and carry out e-CNY pilot trials, following approval from the central government.	
December 2019	Beginning of e-CNY pilot use in different trial scenarios in select cities.	
September 15, 2021		The "Notice on Further Preventing and Resolving the Risks of Virtual Currency Trading and Speculations" totally banned all cryptocurrency transactions in China, clarifying that all cryptocurrency transactions are illegal.
September 24, 2021		The "Notice on Cracking Down on Virtual Currency 'Mining' Activities" banned all cryptocurrency mining activities.

Source: Author; PBOC (2021).

transactions on cryptocurrency trading platforms (see Table 1).

The regulatory policy on cryptocurrency has become progressively stricter, culminating in a complete ban on cryptocurrency transactions in China in September 2021. During this period, the e-CNY pilot program expanded into various scenarios across many areas, covering the cities of Beijing and Shanghai; the municipalities of Chongqing and Tianjin; and the provinces of Guangdong, Hainan, Hebei, Jiangsu and Sichuan.

Another reason the PBOC cited for developing the digital yuan was to explore ways of improving cross-border payments. China's central bank has cooperated with foreign counterparts, such as the Bank for International Settlements (BIS) and other central banks in Hong Kong, Thailand and the United Arab Emirates, in the cross-border CBDC payment program known as Project mBridge. China's participation in this project was in response to calls by the G20 to improve cross-border payment systems. To date, the e-CNY has made the most progress with Project mBridge compared to other partners' CBDCs, with digital yuan transactions accounting for 46.6 percent — almost half — of the total transactions on the mBridge platform (Ku 2024). The mBridge transactions are said to use the same code as China's e-CNY (ibid.). The source code is expected to be fully open in the future, but for now, all the central banks and the 26 observing members of the project have access to it.

One factor that could strengthen China's influence over Project mBridge is the abrupt withdrawal of the BIS from the project in October 2024. This means control will be handed to the central banks, with the PBOC likely to dominate. Mu Changchun, director of the PBOC's Digital Currency Institute, which is responsible for developing the digital yuan, also leads the technical subcommittee of mBridge. Without the BIS's presence, China is likely to take the lead on the project and shape its direction (Long 2024).[2] A possible future scenario could see China becoming the most influential country in Project mBridge, which is increasingly gaining power in geopolitics as it evolves into the dominant cross-border payment platform for wholesale transactions, particularly among developing countries.

Development of the Cryptocurrency Market After the Complete Ban

China has completely banned cryptocurrency trading and mining since 2021, following a notice issued by the PBOC and nine other government agencies. The increasingly strict bans, along with their persistent implementation, have effectively eliminated cryptocurrency transactions operated by businesses in mainland China. However, this ban was not based on law, and there are no laws or administrative regulations in mainland China explicitly prohibiting cryptocurrency trading (Zhao 2022). The notice only bans cryptocurrency business operations, which are considered illegal financial activities. Point-to-point cryptocurrency trading between individuals and personally owning cryptocurrency are not illegal (FX168 Finance Group 2024a). Moreover, individuals' participation in cryptocurrency markets operated by foreign entities is not prohibited (Li and Hang 2021).

Cryptocurrency is legally defined as a VA in China, giving it the characteristics of an "asset" or "commodity" (though not that of "currency"). As such, VAs are protected under Chinese law. For example, contracts involving bitcoin and other cryptocurrencies are considered valid. However, since the notice was introduced in September 2021, court rulings have tended to deny the validity of such contracts (M. Chen 2024). In addition, China has enthusiastically embraced blockchain technology and does not want to completely wipe out cryptocurrency, and its trading has been ongoing in China (FX168 Finance Group 2024a).

Despite the ban, cryptocurrencies such as bitcoin and Ether continue to be widely used in China through the grey market, with an estimated US$86.4 billion in raw transaction volume between July 2022 and June 2023. This total surpassed the US$64 billion in crypto trading in Hong Kong, which has an open attitude toward digital assets (Ranganathan and Zhen 2024). As of 2023, there were an estimated 58 million cryptocurrency users in China — a number second only to that of India, which remains uncertain about the legal status of cryptocurrency (Arcane 2023).

Additionally, the Chinese government holds confiscated cryptocurrency assets worth $6 billion, which, if sold, could significantly impact the global crypto-asset market. China possesses

2 Chinese scholars hold differing views on the BIS's withdrawal, believing it could introduce greater uncertainty for the future development of Project mBridge. See (Shen and Zhu 2025; Zhu 2025).

194,000 bitcoin and 833,000 Ether, far surpassing major companies that hold the most bitcoin, such as MicroStrategy (130,000 bitcoin); Galaxy Digital Holdings (40,000 bitcoin); Voyager Digital Ltd. (12,260 bitcoin); and Tesla (10,725 bitcoin) (Zirojevic 2022). With the rapid rise in bitcoin value to $100,000 each today, the total value of the Chinese government's 194,000 bitcoin could be as high as $19.4 billion — second only to that held by the US government, with its 207,189 bitcoin worth $20.7 billion.[3]

Given this context, some policy experts and academics in China have argued that the country should consider relaxing the cryptocurrency ban. They believe China should reassess the balance between potential gains from innovation and the security risk associated with crypto-asset development, advocating for an active regulatory policy to release the liquidity and vitality of crypto-assets (Dong and Qi 2022). They also question the long-term effectiveness and sustainability of the ban, arguing that China may be missing opportunities to apply new technologies, such as DLT, blockchain and tokenization, to the fintech area (Huang 2022). These new technologies could assist the growth of a "new type of productivity," a novel idea recently defined by the top leader in China in the digital economy. Another argument is that the ban itself introduced risks by creating an entirely unregulated grey market for illegal cryptocurrency transactions (FX168 Finance Group 2024b), which is precisely what Chinese regulators aimed to avoid in the first place.

In addition, with the pro-crypto policy implemented under the second Trump administration, geopolitical considerations and competition with the United States in the global cryptocurrency market, there is a growing likelihood that China may relax its strict regulations on cryptocurrency. Rumours have circulated that China could lift the cryptocurrency ban by the end of 2024, but this did not happen. However, as global pressure increases to stay competitive and attract global investors and companies, China may need to revisit its stance on cryptocurrency, particularly as it faces competition from countries with pro-crypto regulations, such as the United States.

In comparison to the Chinese Communist Party primary concerns about banning cryptocurrency — namely, capital outflow, financial stability (including deterring online financial crimes such as fraud), money laundering and terrorist financing — the potential benefits from unbanning cryptocurrency do not seem substantial enough to change policy. However, there may be some emerging signs of relaxing regulations. At a minimum, China could allow Hong Kong to continue its path of fostering the digital assets/VA market, which presents a safe and manageable option. This approach would align with China's long-standing preference for groundbreaking, bold economic experiments, as seen in the market-oriented liberalization policies adopted since the late 1970s. If successful, these experiments could be expanded to mainland China. Some market analysts, such as Xiao Feng, CEO and chairman of Hong Kong-based HashKey Group, have predicted that this process could take up to two years (CryptoniteUae 2024).

Certainly, such a shift would require proper regulatory mechanisms to mitigate the risks associated with concerns such as financial stability and capital control. For future regulatory development, mainland China could look to Hong Kong, which has already developed a complex but reasonable regulatory framework for governing the VA market, including securities and non-securities VA transactions, over-the-counter (OTC) transactions, stablecoin issuance and regulation, and tokenized assets transactions.

Regulatory Framework and Development of Digital Currency in Hong Kong

Hong Kong has long been regarded as a reputable international financial hub. However, its status as a financial hub has been questioned and diminished due to massive protests in 2019–2020 and changing geopolitical situations since then. In response to this decline, Hong Kong has adopted innovative and inclusive regulatory approaches to digital assets, making VAs a new area for economic and financial growth, thus

3 See data from Bitcoin Treasuries at https://treasuries.bitbo.io/countries/.

better positioning itself as a leader in Web3 and crypto innovation and fulfilling its ambitions to be a hub for VAs both in Asia and globally.

Under the basic legal framework of "one country, two systems," Hong Kong's open and inclusive stance on digital assets, including cryptocurrency, is presumably recognized by the central government in China.

Transition of Regulatory Policies on Crypto-Assets in Hong Kong

Rather than having a single agency regulation, Hong Kong employs a multi-agency system for regulation of the cryptocurrency market. The main regulatory bodies overseeing crypto-assets in Hong Kong include the Securities and Futures Commission (SFC), the Hong Kong Monetary Authority (HKMA), the Financial Services and the Treasury Bureau (FSTB) and the Commissioner of Customs and Excise (CCE).

As the primary regulator of securities and futures markets in Hong Kong, the SFC plays a central role in overseeing cryptocurrencies, which are classified as security and non-security tokens (types of VAs).[4] The process and procedure for transactions between users and cryptocurrency platforms are regulated by the SFC, which issues licences to qualified platforms to conduct cryptocurrency transactions. The HKMA, as Hong Kong's central bank, ensures that banks and other payment systems remain financially stable and solvent. For cryptocurrency institutions and platforms, specifically virtual asset trading platforms (VATPs) and virtual asset service providers (VASPs), the HKMA ensures that users' funds are handled responsibly and transparently. As part of its fiscal policy responsibilities, the FSTB became involved in VA regulation by issuing a policy statement on the development of VAs in Hong Kong in 2022. The policy statement highlighted the government's proactive approach to promoting "sustainable and responsible development of the VA sector" (FSTB 2022).

Since 2019, major regulations, statements and legislation regarding VAs have been issued by the SFC, the HKMA, the FSTB and the CCE. These regulations cover supervision of VATPs, VASPs, OTC VAs, stablecoin issuance and the tokenization market.

On VA trading, the SFC issued a warning statement in 2019 regarding VA futures contracts. In the same year, the SFC released a position paper proposing a new framework for regulating centralized VATPs. In 2022, the FSTB issued its Policy Statement on Development of Virtual Assets in Hong Kong, outlining the plan to establish a licensing regime for VASPs.

In June 2023, the SFC proposed a comprehensive licensing regime for VATPs and VASPs, introducing a dual-licensing system for security and non-security tokens. This framework placed the trading of non-security token crypto-assets under the SFC's supervision, specifically under the Securities and Futures Ordinance and the Anti-Money Laundering and Counter-Terrorist Financing Ordinance. Operators of security tokens are required to hold both a financial licence and a VASP licence, while operators of non-security tokens (bitcoin, Ether and others) need only a VASP licence. In August 2023, the SFC issued further guidance regarding VASP licensing. By the end of 2024, seven VASPs had been licensed, with 10 additional applicants — most of whom were "deemed to be licensed" before the VATP licensing regime's implementation — currently being vetted (Charltons Law 2024).

Regarding stablecoins, the HKMA launched a regulatory "sandbox" in March 2024 to facilitate the development and issuance of stablecoins. This sandbox allows prospective issuers to conduct experiments in a controlled but relaxed environment, encouraging dialogue between the issuer and regulators. This move places Hong Kong at the forefront of global stablecoin legislation and regulation. In December 2023, the FSTB and the HKMA jointly released a public consultation paper on their legislative proposal to regulate issuers of stablecoins. After reviewing feedback from the public consultation, they unveiled the proposal in July 2024. The legislative process to establish a regulatory regime for fiat-referenced stablecoin (FRS) issuers in Hong Kong has been under way since then (FSTB and HKMA 2024).

This regime includes a licensing system for FRS issuers, with those that qualify allowed to issue

4 Security tokens, on the one hand, are digital assets that represent ownership or a stake in real-world assets, such as traditional securities (stocks or bonds), but are issued and traded on blockchain platforms and are subject to specific regulations. On the other hand, non-security tokens, also known as utility tokens, are digital assets designed to provide access to a product or service within a specific blockchain ecosystem, such as Ethereum or other platforms that support smart contracts. They do not represent ownership of an asset or share of a company's profits and are largely unregulated. An example of a non-security token is bitcoin. See Ekshian (2024); Oak Blockchain Education and Media Platform (2023).

more than one FRS under an existing licence. The HKMA will maintain a central register of all FRS licensees, which will be publicly accessible. This approach further enhances Hong Kong's regulatory framework for VAs (particularly stablecoins), addressing potential risks to financial stability and reinforcing Hong Kong's position as a hub for global stablecoin development. On May 21, 2025, the Hong Kong Legislative Council passed the Stablecoins Bill, concluding the legal process that started in 2023 to establish the licensing regime for FRS issuers and to prepare the regulatory framework for issuing stablecoins backed by the Hong Kong dollar (HKMA 2025).

While OTC transactions of bitcoin and other cryptocurrencies are permitted in Hong Kong, they have historically lacked proper supervision. In February 2024, the FSTB released a consultation paper proposing legislative changes to regulate OTC trading of VAs (FSTB 2024). This proposal aims to mitigate money-laundering and terrorist-financing risks, ensuring adequate investor protection. It suggests the introduction of a new licensing regime for providers of VA OTC services under the Anti-Money Laundering and Counter-Terrorist Financing Ordinance. The proposed regime would require anyone offering spot trading of VAs in Hong Kong to obtain a licence from the CCE. The proposed licensing regime would apply to all VA OTC services, whether provided through physical outlets or digital platforms.

Regarding the tokenization market, in March 2024, the HKMA launched Project Ensemble, a new wholesale CBDC (wCBDC) project designed to support the development of the tokenization market in Hong Kong. In August 2024, the HKMA launched the Project Ensemble Sandbox, introducing four main themes of use cases for asset tokenization, signalling a significant step toward real-world applications of tokenization in the financial sector (HKMA 2024a).

Latest Developments in Hong Kong's Crypto-Assets Market

The digital assets market in Hong Kong is thriving, with the duly regulated environment attracting an increasing number of institutional investors. However, compared to the United States, which currently is the leader with US$18.6 billion[5] in projected revenue from digital assets in 2025, Hong Kong's digital assets market was projected to generate only US$200.7 million[6] by the same year. This figure only accounts for licensed VAs, excluding OTC trading.

Hong Kong's crypto-friendly legal and regulatory frameworks have laid a strong foundation for the region to become a global leader in the VA market. Additionally, Hong Kong was the first jurisdiction in Asia to allow retail investors to trade spot bitcoin and Ether exchange-traded funds (ETFs) (Wong 2024). On April 30, 2024, six VA spot bitcoin and Ether ETFs were officially launched on the Hong Kong Exchange. This move provided investors with additional flexibility to buy and sell shares of crypto tokens through a portfolio of securities, financial derivatives or VAs, rather than just cash. On August 5, 2024, Hong Kong's spot VA ETFs set a new daily trading volume record of HK$240 million. The total assets under management for all the Hong Kong VA spot ETFs have surpassed HK$2.157 billion (OSL Group 2024). For VA futures ETFs, data from Hong Kong Exchanges and Clearing Limited (2024) shows that since bitcoin and Ether futures ETFs were launched in December 2022, three VA futures ETFs have attracted HK$529 million in net inflows during the first quarter. Mainland Chinese investors are not allowed to invest in Hong Kong's spot or futures bitcoin ETFs.

In summary, the future of Hong Kong's VA market looks promising and is worth watching closely. However, risks and challenges remain. One of the key concerns is whether Hong Kong's regulatory approach will effectively foster growth in VA markets. According to Eric Yip, executive director (intermediaries) of the SFC, if, despite all regulatory efforts, VAs continue to be primarily traded through unregulated platforms and regulated VASPs fail to operate sustainably, Hong Kong may need to reassess its regulatory framework (Wu 2024).

Nevertheless, Hong Kong's regulators have shown confidence in the future development of its VA market. In February 2025, the SFC released a new regulatory road map to address market concerns by further streamlining access, bridging regulatory

5 See data from Statista at www.statista.com/outlook/fmo/digital-assets/united-states.

6 See data from Statista at www.statista.com/outlook/fmo/digital-assets/hong-kong.

gaps, and promoting cross-agency and cross-border collaboration to sustain Hong Kong's VA market (SFC of Hong Kong 2025). The road map demonstrates the regulators' determination to reshape the compliance system and establish Hong Kong as a global hub for digital assets. It also highlighted their willingness to customize regulatory frameworks to meet the needs of investors, service providers and products in the VA market (Cheong and Austin 2025).

Lessons from Mainland China and Hong Kong

The practices of mainland China and Hong Kong in the development and regulation of digital assets (including both cryptocurrencies and CBDCs) have laid the foundation for the further evolution of international CBDC networks and digital asset transactions. Countries, in particular BRICS+ nations (Brazil, Russia, India, China, South Africa and Iran), have shown interest in exploring the possibility of an alternative monetary system — or at least an alternative payment system. China's work on Project mBridge and Hong Kong's practices in the digital assets market (in particular, its tokenization market) might offer important implications for these countries.

De-dollarization: Project mBridge and BRICS Pay for an Alternative Payment System

Based on local currencies and blockchain technology for a decentralized payment platform, Project mBridge and the proposed BRICS Pay aim to create alternative international payment systems. These systems could challenge the US dollar's dominance in international finance by bypassing the use of the dollar and the Society for Worldwide Interbank Financial Telecommunication (SWIFT) system, which is the internationally recognized standard for global bank transactions.

During the October 2024 BRICS summit in Kazan, Russia, Russian President Vladimir Putin criticized "the dollar being used as a weapon" and called for further development of an alternative international payment system (Maynard 2024). The Kazan Declaration announced that BRICS would "encourage strengthening of correspondent banking networks within BRICS and enabling settlements in local currencies in line with BRICS Cross-Border Payments Initiative" (BRICS Russia 2024, para 65) and "agree to discuss and study the feasibility of establishment of an independent cross-border settlement and depositary infrastructure, BRICS Clear" (ibid., para 66).

Following these developments, the concept of BRICS Pay has resurfaced. Some commentators argue that even though it is still just an idea, its potential is enough to concern the Western world (Freidin 2024). BRICS Pay is not a new concept — it was proposed in the BRICS Business Council's 2018 annual report, which identified the establishment and implementation of the new international payment system as a priority policy recommendation for the BRICS governments (BRICS Business Council 2018). The basic BRICS Pay structure was outlined in the 2018 BRICS Business Council report as well (ibid.). Unlike the SWIFT network, BRICS Pay is a decentralized payment and messaging system supported by the blockchain-based Cloud Router (ibid.; Mobile Payment Study Group of China Telecom Research Institute 2024).

After slow adoption and adjustment among members on the details, BRICS Pay gained momentum during the 2022 BRICS Summit due to Russia's push to bypass the SWIFT network and avoid Western sanctions (Freidin 2024). It was officially raised again at the 2024 BRICS Summit by Russia in response to the growing financial and payment predicament caused by the US-led Western sanctions following its invasion of Ukraine. However, the system is still in the feasibility study stage and has a long way to go before becoming operational.

That said, several core BRICS countries have already developed their own payment infrastructures based on their national currencies, well positioning them to build the infrastructure for BRICS Pay. These include China's WeChat Pay and Alipay, India's Unified Payment Interface and Russia's Mir network. These technologies, including digital wallets, QR-code payments and frameworks directly linked to local banks (ibid.), would enable BRICS Pay to facilitate transactions in local currencies and avoid the dollar.

Avoiding the dollar does not mean bypassing the SWIFT network entirely. BRICS Pay, based on local currencies, still needs to use the SWIFT messaging system to transfer money. That is where blockchain technology comes in. The potential connection between the China-dominated mBridge and BRICS Pay poses a significant challenge to the US-dominated global financial system, which relies on the SWIFT message network. It is clear that BRICS Pay has learned a great deal technologically from mBridge, especially in terms of its blockchain and decentralized design. The concept of the "bridge" underpins both mBridge and BRICS Pay.

mBridge uses a new DLT called Bridge Ledger, compatible with the Ethereum Virtual Machine. It can execute smart contracts on the Ethereum network and uses wCBDC to enable direct cross-border payments without involving SWIFT or correspondent banks. China has been a driving force behind the technology used in the project. Some of the mBridge technology was developed in China, including the novel consensus mechanism, while the other part of the system is based on Ethereum. The design and underlying concepts behind mBridge, including the adoption of the blockchain consensus to ensure that all nodes on the network agree on the current state and the authenticity of transactions, which is vital for preserving the security and integrity of the blockchain (Hussein, Salama and El-Rahman 2023), are analogous to China's two-tier distribution system for e-CNY.

In this system, the central bank has access to all transaction data, while second-tier commercial banks only have access to the necessary data to complete transactions. The mBridge ledger is decentralized, with central banks operating their own nodes and databases, maintaining autonomy over their own systems (Ledger Insights 2024) and updating their distributed ledger data, while commercial banks can back up the data but are unable to update it. In other words, central banks participate in the blockchain consensus, but commercial banks do not.

Imagine a future scenario: For countries seeking to avoid potential Western financial sanctions and facilitate trade within the BRICS bloc or among Global South countries, access to mBridge is critical. Sanctioned countries can use it to transact via local currencies, bypassing both the dollar and the SWIFT system.

China dominates Project mBridge, one of the highest-profile and most advanced cross-border CBDC programs and the only one with real transaction volumes on its rails (Long 2024). Other original BRICS countries, including Brazil, India and Russia, have not developed their own CBDC, let alone cross-border CBDC projects, though South Africa has participated in Project Dunbar but not in a dominant position.[7] In this context, China is likely to lead the efforts among BRICS countries to challenge the dollar-dominated financial order, starting with an alternative cross-border payment system. The unexpected announcement of the BIS's exit from Project mBridge during the BRICS Kazan Summit in October 2024 sparked speculation that geopolitical considerations were behind the decision, potentially leaving the control of Project mBridge to China.

SWIFT, however, as the dominant payment messaging system, will not wait idly for the emergence of the alternative payment systems, even if these systems are still far from operational. SWIFT has launched SWIFT GPI to accelerate cross-border payment processing time (Kapron 2024) and has partnered with other fintech giants to stay relevant. For example, it has collaborated with the United Kingdom's Wise and the US-based payment and financial technology provider Fiserv.

What SWIFT has proposed is to focus on leveraging its massive existing infrastructure to integrate multiple DLT platforms, creating inclusivity and interoperability within the global financial ecosystem. For CBDCs, SWIFT is preparing to launch its own CBDC platform, which aims to serve as a single gateway to connect different CDBC networks with existing payment systems, ensuring interoperability and reducing risks associated with payment system fragmentation. Similarly, SWIFT can serve as a single point of entry for various tokenized networks, enabling the creation, transfer, and redemption of tokens and updating balances between multiple client wallets (SWIFT 2022).

SWIFT is closely monitoring the progress of the mBridge Project. The question remains: Can SWIFT and mBridge integrate with different priorities? For example, could SWIFT focus on large-scale financial transactions while mBridge accelerates innovation and expands financial

7 See statistics on the Atlantic Council's CBDC Tracker at www.atlanticcouncil.org/cbdctracker/.

access through CBDC technology (Nugraha 2024)? These questions will be important for the future of CDBC development, as these systems seek to avoid fragmentation and ensure interoperability of the global payment system.

While mBridge and BRICS Pay are in their initial stages and have not yet become alternative international payment systems, they represent a potential alternative solution to the slow, high-cost SWIFT system. When combined with ongoing geopolitical competition, they present opportunities and choices beyond the US-dominated international financial order, in particular for Global South countries.

However, the fledging development of mBridge and BRICS Pay is far from evolving into operational international payment systems, let alone contributing to BRICS countries' hesitant efforts to promote de-dollarization. mBridge still faces challenges in maintaining stable system performance, ensuring privacy protection (Du 2024), building trust and transparency between central banks, achieving interoperability in technology and standards, coordinating foreign exchange policies and determining exchange rate mechanisms, among other issues. BRICS Pay faces even more severe challenges, including technology and infrastructure limitations, legal and regulatory hurdles, trust building and geopolitical tensions. As such, neither system is likely to challenge the dominance of the US dollar and the SWIFT network in the current global financial system any time soon.

Hong Kong's Growth of the Tokenized Assets Market and Its Implications

Hong Kong's improving regulatory framework is building momentum for the city to become a hub for VA transactions in Asia and beyond. This framework could stimulate the growth of tokenized assets transactions and the broader VA market in Hong Kong and beyond. The features of tokenization and the use of wCBDC for tokenization transactions could have three important implications for China and the world.

First, Hong Kong is pioneering the development of the global tokenization market.

The HKMA's Project Ensemble for wCBDC, started in March 2024, connected VA transactions and traditional real-world financial assets. It promotes the advancement of tokenization for real-world assets by supporting the development of the tokenization market and facilitating tokenized assets transactions (HKMA 2024b). As the HKMA notes, Project Ensemble will "explore innovative financial market infrastructure that will facilitate seamless interbank settlement of tokenised money through wCBDC" (ibid.).

The initial stage of the project focuses on tokenizing both deposits of traditional financial assets and real-world assets. These digital representations of deposits, issued by commercial banks, will be made available to the public. With wCBDC as the foundation, tokenized deposits such as bonds and funds, green bonds and carbon credits, as well as for aircraft, electric vehicle charging stations and treasury management (ibid.), can be used for tokenized asset transactions, unlocking new opportunities for optimization and innovation in the tokenization era (HKMA 2024a).

The first use case of real-world assets tokenization under Project Ensemble was made in August 2024, with the support of Ant Digital Technologies. Shenzhen-listed LongShine Technology Group, a new energy company, digitized and recorded more than 9,000 of its charging piles as real-world assets, which were securely uploaded to the blockchain. This move helped LongShine Technology Group secure its first cross-border financing for real-world assets in Hong Kong, improving financing efficiency and accessibility (Ant Digital Technologies 2024).

This use case demonstrates the potential of tokenized real-world assets and illustrates how Project Ensemble plays a key part in the HKMA's broader initiatives to develop the tokenization market. Following the launch of the Project Ensemble Sandbox, the Project Ensemble Architecture Community was established in May 2024 to develop industrial standards to support interoperability among wCBDC (Bogardi, Cai and Mok 2024). These developments could strengthen Hong Kong's position as a leader in tokenized money and assets (HKMA 2024b, 2024c).

Second, Project Ensemble, which enables tokenized assets transactions through wCBDC, could facilitate cross-border payments, making transactions cheaper and faster.

Hong Kong's Project Ensemble will cover cross-border payment functionalities (Yue 2024) based on DLT for seamless interbank settlement of tokenized money using wCBDC. The HKMA plans to partner with the BIS's Innovation Hub in Hong Kong, which has previously collaborated on tokenization projects such as mBridge. Both mBridge and Project Ensemble are decentralized platforms based on distributed ledgers, enabling end-to-end transactions for cross-border payments using wCBDC. Like the mBridge system, Project Ensemble could bypass the dollar and reduce reliance on the SWIFT network.

However, Project Ensemble does not aim to bypass the dollar and the SWIFT network, though its blockchain technology for transactions of tokenized assets could eventually support both goals. The project will operate under strict anti-money laundering and counter-terrorist financing regulations, in cooperation with global financial institutions. Its primary focus is to facilitate the growth of the tokenization market and support the development of Web3 by connecting Hong Kong's efforts to promote its CBDC with private sector innovation in tokenization. Collaboration with the Banque de France has demonstrated the feasibility of atomic cross-border settlement through the Project Ensemble Sandbox and the bank's Distributed Ledger for Securities Settlement System.

Globally, Project Ensemble has a strong peer competitor, Project Agorá, which was developed by the Federal Reserve Bank of New York in collaboration with allied central banks, primarily from developed economies such as England, France, Japan, Mexico, South Korea and Switzerland. The project aims to use tokenized assets, including commercial and central bank money. A key difference between Agorá, Ensemble and mBridge is the tokenization of commercial bank money (Mesirow Currency Management 2024). In Agorá and Ensemble, tokenized commercial bank money is used for payments, with those payments ultimately being settled in CBDCs (ibid.).

Third, Hong Kong's practices may be viewed by the central government in mainland China as an experiment in tokenized money transactions through wCBDC under proper regulations and supervision. Once these practices mature, China can relax its restrictions on cryptocurrency transactions, as they will be conducted under comprehensive supervision, and the regulatory agencies will have control over the blockchain ledger on which all the transactions are based.

While China has trialled a centralized retail CBDC domestically (the e-CNY), it could benefit from the decentralized features of mBridge and other similar projects. The centralization of e-CNY for domestic use, and its application as a wCBDC in cross-border payments under decentralized systems such as mBridge, could align without contradicting each other.

The latest developments surrounding Hong Kong's passage of the Stablecoin Bill illustrate the coordination between e-CNY's centralized management and decentralized ledger technology. Following the bill's approval, influential researchers such as Jianguang Shen and Taihui Zhu (2025) and Xiaochun Liu (2025) have proposed pilot programs for issuing offshore RMB stablecoins in Hong Kong. T. Zhu (2025) has argued that e-CNY and RMB stablecoins can advance simultaneously without conflict.

Meanwhile, the proactive steps taken by Chinese companies to apply for stablecoin licences in Hong Kong further demonstrate policy alignment between mainland China and Hong Kong regarding cryptocurrency practices. China's fintech giant, Ant International, announced plans to apply for stablecoin licences in both Hong Kong and Singapore (Reuters 2025). Additionally, Chinese e-commerce giant JD.com has planned to obtain stablecoin licences in Hong Kong and other major global markets to significantly reduce costs and improve the efficiency of cross-border payment transactions (M. Chen 2025). These developments are expected to further nudge open the door for mainland China to relax its strict ban on cryptocurrency.

Conclusion

The supervisory practices in mainland China and Hong Kong illustrate two distinct regulatory approaches to the development of digital assets while also sharing some common features. Mainland China, facing a changing global regulatory environment — particularly in the United States — and the persistence of a de facto unregulated grey market, may eventually revisit its strict ban on cryptocurrency transactions, potentially beginning with a trial issuance of offshore RMB stablecoins in Hong Kong. In contrast, Hong Kong has worked to improve its regulatory framework to encompass all types of digital assets. Both approaches reflect a potential route for developing digital assets (cryptocurrency and CBDC) markets within a duly regulated environment — avoiding overregulation, underregulation or outright bans.

This balanced approach offers both advantages and challenges, with implications that could be relevant globally. It can help regulators maintain oversight over the volatile development of cryptocurrencies, stablecoins and tokenized assets, while also supporting a more efficient, secure and cost-effective alternative payment system through wCBDC. However, excessive regulation may stifle innovation and hinder market growth. Meanwhile, comprehensive bans on cryptocurrencies — such as China's — have proven ineffective in eliminating illegal cryptocurrency activity and have instead fostered an unregulated grey market that is difficult to monitor.

The growth of markets for digital assets transactions, tokenization of assets, stablecoins and wCBDCs has opened doors for alternative payment systems — and even for an alternative financial system. These alternative payment systems could, from a technological perspective, help facilitate cross-border payments by complementing the SWIFT system and making transactions cheaper and faster. Alternatively, they could be used as tools to challenge the US dollar-dominated international financial system and to bypass US financial sanctions, depending on the economic factors, geopolitical calculations and strategic intent behind the development of these alternative payment systems.

While these alternative payments and financial systems are still in their initial stages, they pose challenges to the United States and the dollar-centric global financial order. However, with appropriate responses and adoption of new technologies such as DLT, the US-led financial system, including the SWIFT networks, could largely maintain its dominance over the next decade, even if it cannot stop the emergence of an alternative payment system or even of an alternative financial system.

The regulatory practices in mainland China and Hong Kong also illustrate that government power and the regulatory environment have significant leverage over the cryptocurrency market worldwide. First, potential government interventions are among the most dominant factors shaping the development of the global digital assets market. While China's strict ban on cryptocurrency transactions has negatively impacted the market, and Hong Kong's improving regulatory environment is increasingly accommodating the needs of the expanding VA sector, the second Trump administration has helped boost the market through its pro-digital assets policies. Second, the Chinese government, along with the US and UK governments, holds substantial amounts of bitcoin acquired through law enforcement and forced asset seizure, positioning it as an important player in the global cryptocurrency market. Third, the lack of regulatory clarity regarding cryptocurrency in many jurisdictions has created uncertainty in the global digital assets market. With clearer — and potentially customized — regulatory frameworks, this uncertainty could be reduced, laying the foundation for more stable and transparent market growth.

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