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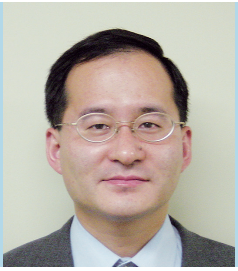
FOREWORD

In Asia, digitization and the use of technology had been progressing in financial sectors and capital markets, and this trend has accelerated amid the COVID-19 pandemic. One of the most prominent areas of digitization in the financial sector is payment. Both the public and private sectors in each country in the region are working to improve payment efficiency. A major initiative in the public sector is the development of central bank digital currency (CBDC). For example, China began trial runs of the digital yuan in 2020 to meet mainly domestic retail payment demand, and it is gradually expanding the locations for trial runs. Thailand has been preparing for the introduction of Retail CBDC since 2021 with the aim of providing trusted and safe means of payment.

While the number of startups developing innovative products and services is increasing rapidly in Asia, many startups face difficulties in raising sufficient funds from traditional financial institutions such as banks. Under these circumstances, the use of alternative funding methods such as equity crowdfunding (ECF) and peer-to-peer (P2P) lending is steadily increasing. However, ECF and P2P lending are still not fully recognized by startups and investors. In some countries, laws and regulations for ECF and P2P lending have not yet been introduced, and the institutional framework, including investor protection, needs to be developed in these countries.

There is growing recognition of the benefits of blockchain technology for the financial sector and capital markets in Asia. Laws and regulations of digital assets such as security tokens and crypto currencies have been developed in many countries. In recent years, with the growing interest in new blockchain-related products and services such as decentralized finance (DeFi) and non-fungible tokens (NFTs), how to regulate them has been discussed. Blockchain associations were established in many Asian countries, and the industry, policy makers and financial regulators are expected to work together to increase the use of blockchain technology to improve the efficiency and transparency of financial transactions.

This issue of *Nomura Journal of Asian Capital Markets* features articles related to the current status, major challenges, and prospects of digitization and the use of technology in the financial sector and capital markets of China and major ASEAN countries.



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China's Digital Yuan—Recent Trial Runs and Prospects for Its Use in International Settlements

Introduction

In the midst of the global novel coronavirus (COVID-19) pandemic, China hosted the 2022 Winter Olympics from February 4 to February 20, 2022. It then held the Winter Paralympics from March 4 to March 13.

These two major international sporting events, held once every four years, were conducted at venues in the Chinese capital of Beijing and in the city of Zhangjiakou in the neighboring province of Hebei. The creation of bubbles to control venues and facilities where athletes and tournament officials stayed and to prevent the spread of COVID-19 was a topic of much discussion. Another anti-pandemic measure that drew attention was the experimental use of the digital yuan (or, e-CNY) as well as credit cards as payment methods for shopping and eating inside the bubbles.

The digital yuan is a central bank digital currency (CBDC) issued by China's central bank, the People's Bank of China (PBOC). The digital yuan can be used instead of cash (coins and banknotes) to make payments using a mobile phone after downloading a dedicated app and charging the amount needed. The PBOC formed a digital currency research team in 2014, and in January 2017 it established the PBOC Digital Currency Research Institute (DCRI) in Shenzhen. With the approval of the State Council, the PBOC started a pilot digital yuan research and development (R&D) program with domestic commercial banks. Then in June 2018, the PBOC Digital Currency Research Institute established the Shenzhen Financial Technology Co. to conduct fintech experiments in Shenzhen and further promote R&D on digital currencies. Since 2020, pilot testing of the digital yuan has been conducted in Shenzhen.

Some of the world's central banks are planning to issue CBDCs and have begun trial runs. For example, among the more advanced nations, Sweden's central bank launched a project in November 2016 aimed at issuing an e-krona as a supplemental payment method for its fiat currency, the krona. Among emerging countries, Cambodia's central bank has begun a project aimed at issuing the Bakong as a CBDC. Meanwhile, China, the world's second largest economy, is far ahead of the rest of the world in R&D on CBDC and is performing trial runs to issue and distribute a digital currency.

This article presents a history of China's efforts to introduce a digital yuan, including its system design and trial runs conducted to date. The article also considers the possibility of the digital yuan's future use in the Asian region.

China's Efforts Toward Launching a Digital Yuan—Accelerated by the Libra Concept and the COVID-19 Pandemic

Libra concept's impact on China

Speaking at a domestic academic conference on July 8, 2019, PBOC Research Bureau Director-General Wang Xin said that the State Council had approved research on the issuance of a digital currency by the central bank. This was the first time the PBOC officially revealed the existence of a plan to issue a digital yuan for use in China.

The announcement's timing in part reflected the PBOC's concerns about the Libra (now Diem) concept launched by Facebook (now Meta). The Libra concept, first announced by Facebook on June 18, 2019, was a plan to issue a crypto asset as digital currency to be used for online transactions. Bitcoin, a conventional digital currency, had already been issued, but it was not backed by any other asset type, such as a national currency, and lacked a supervisory organization, such as a country's central bank. As a result, Bitcoin's price fluctuated widely, making it an unstable settlement currency. On the contrary, Facebook's Libra concept was a plan to issue a digital currency (or stablecoin) that would be administered by the Libra Association, an organization with capital from member global corporations, and backed by a basket of assets including the USD, the EUR, and government bonds of several countries.

However, the Libra concept raised concerns among the financial authorities in many countries. PBOC's Wang Xin expressed his views on the Libra concept when speaking at the aforementioned academic conference. For starters, he thought that Libra had the potential to function as a currency, whereas the volatile Bitcoin would have difficulty serving as a replacement for conventional currencies. Secondly, he therefore considered that the Libra concept could have a significant impact on countries' monetary policies and financial stability, as well as on the global financial system. This impact stems from currencies as a source of profit and power, with the ability to influence international politics and diplomatic relations. If a single payment method has the same function as a currency, it will become a competitor of countries' legal currencies. Thirdly, Wang Xin noted that central banks would need to quickly issue their own digital currencies to fend off the challenge from Libra, and that China needed to quickly raise its voice in support of China's ongoing effort to gain international support and cooperation for its effort to issue a digital currency.

Soon thereafter, on August 18, 2019, the Central Political Bureau (Politburo) of the Chinese Communist Party Central and the State Council jointly released a document outlining their opinions on turning Shenzhen into a future model of socialism with Chinese characteristics. The document included an opinion supporting research on digital currencies and the innovative application of mobile payments in Shenzhen. With 2020 marking the 40th anniversary of the designation of Shenzhen City as a special economic zone, on October 11 the general offices of the Communist Party of China Central Committee and the State Council jointly announced a five year (2020-2025) pilot plan to implement comprehensive reform measures to build Shenzhen into a model of socialism with Chinese characteristics. The plan included support for the implementation of an internal closed test of the digital yuan and the promotion of R&D and the applications for the digital yuan as well as international cooperation in those fields. This plan led to the first pilot test of the digital yuan in Shenzhen.

COVID-19 pandemic's impact

China's plan to test its digital yuan took on a more concrete shape in 2020, as one of the country's responses to the spread of the novel COVID-19. During the rapid spread of the infection following the initial outbreak in Wuhan City, Hubei Province in December 2019, it was recognized that the virus adheres to money (coins and banknotes), the handling of which can be a source of infection in humans. Accordingly, measures to quarantine and disinfect cash were strengthened. At the same time, mobile payments such as Alipay and WeChat Pay, which do not require handling of cash, were recommended.

At its annual conference on measures to secure safe use of money, gold, and silver held on April 3, 2020, the PBOC cited its R&D on the digital yuan as an effort to strengthen top-down promotion of the digital currency's use during 2020. The PBOC stressed that the digital yuan's use as a payment method that does not require direct contact with cash could help mitigate the spread of COVID-19 infections.

Digital Yuan's System Design

On July 16, 2021, the PBOC released a white paper entitled "Progress of Research & Development of E-CNY in China," the central bank's first document providing details about its digital yuan. The white paper says that, as of the end of June 2021, the pilot program had seen the e-CNY applied in over 1.32 million scenarios, including payments to restaurants and transportation companies. More than 20.87 million personal wallets and over 3.51 million corporate wallets had been opened, with the number of transactions totaling 70.75 million and transaction value approximating CNY34.5 billion.

In addition to the white paper, PBOC Governor Yi Gang gave an overview of the digital yuan during a lecture later that year on November 9. The institutional design of the digital yuan based on what can be confirmed from the white paper and Yi's lecture is as follows.

Positioned as a fiat currency

According to the white paper, the digital yuan is defined as a fiat currency issued in data format by the PBOC.

The pilot test run was limited to certain areas within China, and one of the challenges that must be overcome before official issuance of the digital yuan is the legal procedures. On October 23, 2020, the PBOC released a proposed amendment to the Law of the People's Republic of China on the PBOC (hereafter, the People's Bank of China Law), which is China's central bank law, and collected public comments until November 23 of that year. In addition to establishing the yuan as the legal tender of the People's Republic of China (Article 18), the proposed amendment stipulates that "the renminbi includes physical and digital forms" (Article 19), establishing a legal basis for the issuance of CBDC.

In addition to stipulating that the renminbi is produced and issued by the PBOC (Article 20), the amendment says "… any other legal entity or individuals cannot issue or sell tokens to replace the circulation of renminbi" (Article 22) thus clarifying that only the PBOC, in its role as a central bank, can issue digital yuan as legal tender and leaving no room for issuance by private entities. While proceeding with its trial run of the digital yuan, the PBOC also strengthened measures to ban the issuance and distribution of Bitcoin and other crypto assets in mainland China.

After the People's Bank of China Law is revised, the PBOC is expected to proceed with the drafting of detailed rules for the issuance and distribution of the digital yuan, based on the results of market-based trial runs.

Adopting a two-tier operating system

China's CBDC prototype created by the PBOC in 2016 was based on the following ideas. First, the digital yuan is positioned as an alternative to cash in circulation (M_0), and therefore has exactly the same function as cash (coins and banknotes), does not pay interest, and essentially does not compete with bank deposits.

Second, the CBDC operating system is a two-tier system in which the PBOC issues the digital currency to commercial banks or other settlement institutions, which then provide digital yuan exchange and circulation services to the public. CBDC issuance methods include (1) a direct method in which the central bank issues directly to users and an indirect method in which the CBDC is issued to users through commercial banks, and (2) an account method in which the central bank issues the CBDC through central bank accounts or a token method that enables exchanges among users without using a central bank account. The PBOC statements noted above indicate that China is envisioning an indirect CBDC issuance method that enables digital currency exchanges between users without the use of central bank accounts. Meiji University Professor Shuji Kobayakawa calls this CBDC system an "indirect issuance/value preservation scheme" (Figure 1).[1]

Third, China's digital yuan system design will set upper limits for the outstanding balance and per-transaction amount available on digital wallets on mobile phones that have been charged with digital yuan. These limits are aimed at reducing institutional friction and banks' risk as much as possible.

Managed anonymity

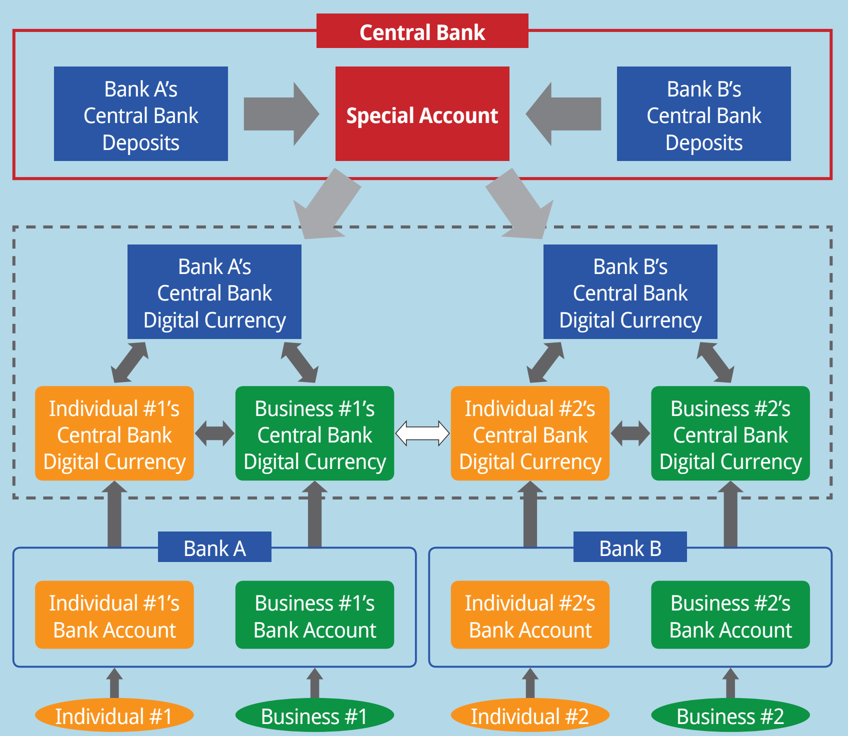
China's digital yuan system's "managed anonymity" follows the principle of "anonymity for small value and traceable for high value" and its collection of personal information is based on the principle of collecting the minimum amount of needed information. The e-CNY system collects less transaction information than traditional electronic payment systems. The storage and use of personal information is strictly controlled, and the PBOC cannot provide information to third parties or government agencies unless required to do so by explicit laws and regulations. Data security and privacy protection are strengthened through legislative passage of laws, such as China's data security law and personal information protection law.

Usage

The digital yuan's system and usage are intended mainly to meet domestic retail payment demand. As long as there is demand for cash, the PBOC will not stop distributing cash, nor will it use an administrative order to force a complete shift to the digital yuan.

Cross-border use and international payments using the digital yuan are relatively complicated and must be conducted in compliance with legal constraints, such as anti-money laundering and identity verification (Know Your Customer).

Figure 1: CBDC: Indirect Issuance/Value Preservation Scheme



Source: Nomura Institute of Capital Markets Research, based on Shuji Kobayakawa, A Study on Central Bank Digital Currencies: Designing Frameworks and Implications, in Seikei Ronsou (Review of Economics & Political Science), Volume 87 (No.3-4)

Digital Yuan's Trial Runs

Designation of "4 regions + 1 scene" (2019–20)

In addition to the decision to conduct trial runs of the digital yuan in Shenzhen in August 2019 and October 2020, the PBOC DCRI established Yangtze Fintech Co., Ltd., as a new fintech subsidiary in Jiangsu Province's Suzhou City on March 1, 2019.

On April 18, 2020, the PBOC DCRI announced that, in addition to the e-CNY trial runs being conducted in Shenzhen and Suzhou, it would carry out closed trial runs in Hebei Province's Xiong'an New Area, which is near Beijing and was established by President Xi Jinping as a base for innovation, and in Sichuan Province's Chengdu City, a hub city in China's interior. In addition to trial runs in those four regions, the PBOC DCRI announced it would conduct a similar closed trial run in "scenes" related to the 2022 Beijing Winter Olympics.

Thereafter, the Shenzhen pilot test run was conducted in October 2020, with 50,000 residents selected by lottery receiving 200 digital yuan per person (total distribution of 10 million e-CNY) in China's first domestic public trial run of its CBDC. The second domestic public trial run was held in Suzhou in Jiangsu Province in December 2020 and included use of e-CNY for offline sales on December 12. In addition to offline sales at physical stores, the Suzhou trial run tested its use with online mall (JD.com) sales and the ability to transfer digital yuan without a mobile phone network.

Expansion of trial run regions (2020)

On April 12, 2021, Li Bin, head of the PBOC's Macroprudential Policy Bureau, revealed that in October 2020 the digital yuan trial regions had been expanded from the "4 regions + 1 scene" originally designated at the end of 2019 to six more regions, including Shanghai, Hainan Province, Changsha in Hunan Province, Xi'an in Shaanxi Province, Qingdao in Shandong Province. And Dalian City in Liaoning Province, and that trial runs in those new regions were started a month later in November 2020.

According to the January 4, 2022, issue of the *China Securities Journal*, the

PBOC began distributing a trial wallet app for managing digital yuan on smartphones. The app can be downloaded to iPhones and smartphones using the Chinese Android version by residents living in 10 regions including Shanghai and as well as near venues of the Beijing Winter Olympics ("10 regions + 1 scene").

Trial run at the Beijing Winter Olympics (February–March 2022)

1) Two charging methods

The e-CNY trial runs conducted inside the bubbles at the Beijing Winter Olympics used two charging methods. Users in the bubbles were able to select either method.

- Software-based wallet method

  The first method uses a "soft wallet" that is charged by downloading the e-CNY app to a mobile phone. Users from abroad using an iPhone were able to get a mainland China Apple ID and then download the e-CNY app from an online app store. Users with Android OS mobile phones could download the e-CNY app using a QR code provided by the Bank of China (which was the official banking partner of the Beijing Winter Olympics and Paralympics).

  When opening a software wallet, it is not necessary to link it to a bank account in mainland China, and daily small-lot transactions can be conducted on wallets set up with any authorized operator selected by the user.

- Hardware-based wallet method

  The second method is called a "hard wallet," which can be a payment card or a bracelet. The hard wallet is charged when the user exchanges his or her nation's currency for e-CNY by using a dedicated e-CNY automatic exchange machine.

2) Trial run results

CNY cash notes (including bank notes) and VISA credit cards also could be used in the bubbles, but third-party payment systems such as Alipay and WeChat Pay could not. On February 10, 2022, Beijing Local Financial Supervision and Administration Deputy Director-General Wang Ying said that transactions conducted during the e-CNY trial run held in the Beijing Winter Olympics bubble venues had exceeded 400,000, with a total transaction value of CNY9.6 billion. However, these figures may include transactions made during test runs conducted before the start of the Winter Olympics.

Expansion of trial run regions (2022)

On March 31, 2022, the PBOC announced that it had designated six more regions for e-CNY trial runs during a roundtable discussion about its digital yuan R&D activities. The added regions are Tianjin City, Chongqing City, Guangzhou City in Guangdong Province, Fuzhou City and Amoy City in Fujian Province, and Zhejiang Province (site of the 2022 Asian Games originally scheduled for September 10–25th but postponed on May 6 until a date to be decided). During the roundtable discussion, it was announced that Beijing and Zhangjiakou City in Hebei Province, where e-CNY trial runs were held temporarily in bubble venues during the 2022 Winter Olympics and Paralympics in February–March, would also become regions conducting e-CNY trial runs.

Future efforts based on trial run results

Based on the trial runs conducted thus far, the PBOC plans to make the following improvements to its CBDC moving forward.

First, it plans to create a management model more suitable for the digital yuan that references the concepts of cash and bank account management. Second, the PBOC plans to improve functionality, including making e-CNY payments more efficient, protecting users' privacy, and preventing counterfeiting. Third, it will promote interactivity between the digital yuan and existing electronic payment tools and, fourth, the PBOC plans to develop a digital yuan ecosystem that will increase and diversify the scenes where the digital currency can be used.

Research into Cross-Border Settlements using the Digital Yuan

Preparation for international payments (establishment of joint venture with the Society for Worldwide Interbank Financial Telecommunication [SWIFT])

Reuters reported on February 3, 2021, that the SWIFT established a joint venture with the PBOC DCRI on January 16, 2021. The joint venture, Finance Gateway Information Services Company, has registered capital of EUR 10 million, with 55% from SWIFT and 45% from the PBOC DCRI.

The joint venture's legal representative is Huang Mi-Lin (SWIFT China District Governor), and its chairman is Chen Shigang (former Deputy Secretary-General of the Payments & Clearing Association of China). Three of the joint venture's four directors are from SWIFT and one is appointed by the PBOC DCRI head. The joint venture's operations include information system integration, data processing, and technical consulting.

China's Cross-Border Interbank Payment System (CIPS) has been handling CNY international settlements since 2015, using a system design and processing transactions on the premise of connectivity with SWIFT. The joint venture's operations may also include research into international cross-border interbank payments using the interconnection between SWIFT and CIPS.

Multiple initiatives

On February 24, 2021, the PBOC announced that it will begin joint research on a multi-CBDC platform called the Multiple CBDC (m-CBDC) Bridge with the central banks of Hong Kong, Thailand, and the United Arab Emirates (UAE). The project aims to develop a prototype platform that will use Distributed Ledger Technology (DLT) to enable simultaneous cross-border settlements for CBDC's in multiple currencies and enhance the convenience of foreign exchange transactions in international trade. The project is being supported by the Bank for International Settlements (BIS) Innovation Hub Hong Kong Centre.

In a report released in March 2021, the BIS presented three conceptual approaches for creating a system that would enable a country's CBDC to be used for cross-border payments. The first approach would be to create a system of compatible CBDCs issued by various countries with common technical standards for data, technology, and user interfaces as well as aligned regulatory and supervisory standards. The Bank of Japan and some other central banks are participating in an international collaborative research project for this type of model. In the second approach, each country issues its own CBDC, but they share common technology and payment systems. This approach is being examined in a joint project by the Monetary Authority of Singapore and the Bank of Canada.

In the third approach, participating countries integrate their CBDCs into a single multi-currency CBDC system that serves as a payment platform for multiple countries. This third approach is the m-CBDC Bridge model mentioned above.

Pilot project for payments with Hong Kong

On March 30, 2021, the PBOC, in collaboration with the government of the Luohu District in Shenzhen, the Bank of China, and the Bank of China (Hong Kong), conducted a trial of the digital yuan by Hong Kong residents in mainland China. The participating Hong Kong residents included (1) those who frequently visit Shenzhen and have a Mainland Travel Permit with a registered name that identifies them when making digital yuan transactions and (2) those who occasionally visit Shenzhen but do not have a Mainland Travel Permit (and are allowed to enter the mainland anonymously but must provide a registered phone number). The trial participants downloaded the e-CNY app to their mobile phone while in Hong Kong and then showed a QR code to a point of sale (POS) device when making payments for small purchases when in Shenzhen. The Hong Kong residents were allowed to open one of five types of wallet depending on the level of the account registered to their name. Participants could upgrade to the "No. 2 type" wallet by linking with a Bank of China card, which would enable them to make single payments of up to CNY50,000.

Then, on June 8, 2021, the Hong Kong Monetary Authority (HKMA) announced its "Fintech 2025" strategy. The strategy clarified the HKMA's plan to (1) start research on digital Hong Kong dollars (e-HKD) for retail in cooperation with the BIS Innovation Hub Hong Kong Centre and (2) collaborate with the PBOC in supporting the technical testing of e-CNY in Hong Kong with a view to providing a convenient means of cross-boundary payments for Hong Kong and mainland China residents.

In addition, according to a *China Securities Journal* report on December 9, 2021, PBOC DCRI Director Mu Changchun told an audience attending a forum on the role and prospects of the Hong Kong international financial center on that same day that the DCRI and HKMA bilateral collaborative project had completed its first-stage technical test. The test involved Chinese mainland banks with branches in Hong Kong charging digital yuan wallets held by designated stores in Hong Kong and conducting transfers and consumption transactions using e-CNY. Mu also explained that the two parties were in the midst of a second-stage test that connected the digital yuan system with Hong Kong's Faster Payment System (FPS) that supports instant payments using the Hong Kong dollar or the e-CNY.

Closing Remarks

In Article 21, Section 3 "Deepen supply-side structural reform" of China's 14th Five-Year Plan covering the years 2021–2025, it is clearly stated that China "will steadily advance digital currency R&D." The PBOC has stated that it will use the digital yuan mostly for domestic retail payments for the foreseeable future and that it will not announce a specific issuance schedule in advance. More recently, the PBOC's trial distribution of digital yuan consumption coupons in some regions as part of domestic economic stimulus measures since June 2022 is being watched closely.

The PBOC has explained that international settlements using the digital yuan will be based on respect for the currency sovereignty of other countries and in compliance with the laws and regulations of countries involved in the transactions. The central bank also stated that it will establish a cooperative mechanism for foreign exchange trading and administrative supervision of its CBDC. The PBOC will consider a digital yuan international payment method from a long-term perspective that takes into account other countries' R&D on CBDC and technical cooperation. Its digital yuan internationalization strategy also will emphasize overcoming the international monetary policy trilemma of the free flow of capital, a fixed exchange rate system, and autonomous monetary policy.

Notes

1 Shuji Kobayakawa, A Study on Central Bank Digital Currencies: Designing Frameworks and Implications in Japanese, in *Seikei Ronsou* (Review of Economics & Political Science), Volume 87 (No.3-4), March 22, 2019.

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KASHMINDER SINGH

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Equity Crowdfunding–the Malaysian Experience

Introduction

Malaysia is an equity crowdfunding (ECF) success story. Since its beginning in 2015, the industry has steadily grown and gone on to become an important fundraising option for Malaysian startups and small and medium-sized enterprises (SMEs).

Malaysia has become one of the region's leading countries for regulated ECF. As many regional and global research outfits group ECF and peer-to-peer (P2P) lending together when compiling crowdfunding statistics, it is hard to find ECF-specific numbers for the ASEAN, Asia, and Asia-Pacific (APAC) regions. Nevertheless, reviews of ECF operators' performance in countries where ECF is regulated reveal that Malaysia is one of the best performing countries.

ECF was introduced as part of the government's initiative to create greater, more cost-efficient and simpler access to funding for SMEs and startups. At an event in 2014, then Chairman of Securities Commission Malaysia (SC), Tan Sri Ranjit Ajit Singh, said, "The SC believes that leveraging on the power of crowdfunding will assist in the democratization of wealth, prosperity and ideas across the entire economy. . ."

This vision of the democratisation of fundraising has been realised. The ECF industry has recorded steady growth, firmly establishing itself in the SME funding landscape. Companies that previously had limited options to access capital have been able to successfully secure funding for growth and expansion. Thousands of investors have been able to invest in deals that otherwise would have been accessible only to venture capital (VC) companies and like investors.

In tandem with its growth, ECF has risen in importance over the years, with SMEs now seeing it as among their first choices when fundraising. At launch in 2015, ECF was positioned as an alternative fundraising option. Today, the alternative tag is no longer valid. ECF is today arguably the largest funding channel for startups and smaller SMEs. This is evidenced by the fact that in 2021, RM221.63 million was raised in 104 ECF campaigns.

The Road to Launch

The roots of ECF could be found in a conceptual framework for an unlisted market that was proposed by SC back in May 2013. The MyULM platform was envisaged by SC as an online trading platform for unlisted securities and alternative investment products under its Capital Markets Master Plan 2 (CMP2).

MyULM was aimed at addressing the capital market needs of SMEs. It would be a centralised platform that brought together over-the-counter (OTC) trading of unlisted securities as well as (importantly) emerging alternative investment products and asset classes. However, MyULM ended up never being built.

SC then began introducing standalone capital raising innovations, with ECF being the first. A public consultation paper was released in 2014. From there, a regulatory market framework to facilitate the establishment of alternative trading platforms including ECF platforms was readied by SC. It then invited applications from interested operators. A total of 27 applications were received, and in June 2015, 6 ECF platform operators were approved by the SC.

These 6 platforms began operation in late 2015 and early 2016. A seventh platform was approved to operate in 2018. In 2019, another 3 operators were registered, bringing the total number of ECF operators in Malaysia today to 10. These operators are a mix of local platforms and those with Singapore, Europe and Middle East connections.

Performance

ECF took 3 years to find its footing before taking off to become a major fundraising channel for startups and SMEs in Malaysia. Like most innovations, ECF went through a period when its value to the ecosystem was questioned and assessed. Some scepticism was expressed as to whether crowdfunding for capital would be embraced by companies and investors.

However, the success of some early ECF campaigns drew positive media attention. This helped spread information about ECF to the wider public. The first such campaign was run by Kakitangan, an SAAS-(software-as-a-service) based HR (human resource) startup on pitchIN, a local ECF platform. Kakitangan raised RM1.55 million from 63 investors in less than 24 hours in September 2016. The publicity generated by this campaign gave a boost to the wider ECF industry.

While it still took a few more years to truly unleash its potential, the success of the first few big name ECF campaigns was instrumental in convincing other companies that there was another way to raise funds than just making the VC rounds.

The number of campaigns and amount raised annually by the ECF industry are shown in Table 1.

In terms of number of ECF campaigns, 2018 was a challenging year for the industry. A hotly contested general election that took place in May 2018 dominated the minds and hearts of Malaysians in the first half of the year. Most companies held off their fundraising plans to the later part of the year, after the country had recovered from election fever.

The arrival of new ECF operators also added some steam to the industry and by the end of 2019, it was back on track. In 2020, the ECF industry took off with exponential growth that cemented its position as the de facto fundraising option for startups and SMEs in Malaysia.

The Malaysian ECF Landscape

Before we look at the factors that contributed to the success of ECF in Malaysia, it will be helpful to get a view of the participants and features of the industry. The industry data below are taken from the 2021 Annual Report of the SC.

There were 104 successful campaigns in 2021, up from 80 in 2020. It is certainly an active industry, with 8 to 9 campaigns completed on average every month in 2021. In tandem with the rise in successful campaigns, the total funds raised also increased to RM221.63 million from RM127.73 million in 2020.

Companies that carried out ECF campaigns in 2021 raised an average RM1.60 million. The campaigns came in all sizes. The smallest raised just RM42,460 while the largest campaign in 2021 raised RM18.89 million. It should be noted that In March 2022, Commerce.Asia became the first issuer to raise the maximum allowed amount of RM20 million.

The mix between nontechnology and technology issuers is fairly even in 2021, at 53% and 47% respectively. Historically, this was not so in the early years when mostly technology startups carried out ECF. As information about ECF filters to SMEs, more traditional and brick and mortar companies have started carrying out ECF campaigns.

There are practically no restrictions on the type, age and industry segments for companies that can apply for ECF. Any private limited company, non-listed public company or limited liability partnership with a clear business plan is free to explore ECF.

As for the age of the companies, 39% of the issuers have been in operation for less than 2 years. Another 37% are between 2 and 5 years old. Nearly a quarter of the issuers (24%) have been operating for more than 5 years.

It is not surprising to see, given the fact that ECF is positioned to cover the early-stage funding gap, that more than half the issuers raised funds for their Series A stage. Twenty-two percent of the issuers did Seed stage funding while another 23% were very early-stage at pre-seed. A mere 1% carried out post-Series A fundraising.

On the investor side of the equation, the total number of participating investors since ECF was first introduced in 2015 surpassed the 11,000 mark in 2021. More investors than ever have participated in 2021, as investor participation increased to more than 5,000 from more than 3,000 in 2020.

ECF is mostly locally driven and male dominated at this time. Ninety-six percent of investors are Malaysian and there are more men investing (62%) than women. One statistic that augurs well for the future is that a majority of the participants are young. Forty-seven percent of investors are below 35 years of age. Another 33% are aged between 35 and 45. Twenty percent of the investors are aged above 45, of which 13% are under 55 and 7% are above 55 years old.

Not surprisingly, retail investors make up the largest crowd in ECF campaigns. In 2021, 57% of the investors identified themselves as retail investors. Angel investors make up 24% of investors with the rest being sophisticated investors.

Angel investors are investors categorised as tax residents in Malaysia and whose total net personal assets exceed RM3 million or whose gross total annual income is not less than RM180,000 in the preceding twelve months or who jointly with a spouse have a gross total annual income exceeding RM250,000.

Sophisticated investors are defined in the Capital Markets and Services Act 2007. For individuals, they are those whose total net assets exceed three million ringgit, or with gross annual incomes exceeding three hundred thousand ringgit, or who jointly with a spouse have a gross annual income exceeding four hundred thousand

Table 1: Number of Campaigns and Amount Raised in the ECF Industry, 2016-2021

	2016	2017	2018	2019	2020	2021
No of campaigns	14	24	14	28	80	104
Amount raised (RM Million)	10.4	33.82	15.06	14.72	127.73	221.63

Note: Number of successful ECF campaigns and amount raised annually.
Source: SC Annual Reports

ringgit. Corporations with total net assets exceeding ten million ringgit based on the last audited accounts are also defined as sophisticated investors.

What Makes ECF Tick in Malaysia?

Now that we have an idea of the ECF industry landscape, let us examine what led to the vibrant ECF industry in Malaysia. There are quite a few factors, as examined below, that have helped make ECF in Malaysia such a success.

A responsive regulatory approach

The regulatory approach taken by SC has been instrumental in creating an environment that is conducive for growth. Perhaps the most important step taken by SC when it created the ECF framework was its decision to allow retail investors to participate in ECF deals. This enabled true crowdfunding to take place.

The participation of retail investors has enabled companies to market their funding deals widely. A large investor base has emerged with popular ECF deals ending up with hundreds of investors. While angel and sophisticated investors typically put in the most funds, retail investors add momentum to campaigns by bringing in the crowd. Figures collected by pitchIN over the years have shown a consistent pattern. Retail investors make up 75% of the investors in ECF deals, while angel and sophisticated investors put in 75% of the amount raised.

Allowing anyone to participate has a strong impact on the ECF industry. Its effect can perhaps be best appreciated by comparing industry growth in Malaysia to jurisdictions where ECF participation is limited to certain classes of investors. A good example of such an environment would be Singapore, which allows only accredited investors to participate. Consequently, ECF has not taken off there on the levels seen in Malaysia.

Of course, SC ensured that there were adequate protective mechanisms for ECF retail investors. These measures include limiting retail investors to a maximum RM5,000 investment per deal, as well as an annual investment limit of RM50,000.

Companies seeking to raise funds must make extensive financial and business disclosures on their campaign pages. In addition, ECF operators are also mandated to carry out due diligence on companies raising funds on their platforms.

As the ECF operators gained experience, SC also began to widen the potential market size for ECF. This has been done by progressively increasing the amount companies could raise on ECF platforms. At the start of ECF in 2015, companies were limited to raising a maximum of RM3 million per campaign, with a lifetime limit of RM5 million. Also, only private limited companies with paid up capital less than RM10 million were eligible to raise funds.

As the market matured, SC first increased the funding limit to RM10 million and recently, in November 2021, SC announced that the paid-up capital limit was removed and that companies could now raise up to RM20 million on ECF platforms. It also opened up ECF to non-listed public companies. These measures have steadily brought new participants into the market.

The right timing

ECF arrived right when it was needed.

ECF helps to address the estimated RM90 billion financing gap among micro SMEs (MSMEs)[1], which is especially acute for earlier stage companies.

Prior to the introduction of ECF, the early-stage funding landscape in Malaysia was made up of government agencies that offered grants, private and public accelerator programmes, some VC companies that focussed on pre-Series A deals and traditional 'family & friends' investors.

Among the most visible government funding agencies is CRADLE, which focusses on technology startups. It provides pre-seed grants of around RM150K to startups to help them build minimum viable products. Companies that had validated business models and needed funds for expansion could apply for larger grants (RM500K) for marketing and business growth.

A few startup accelerator companies operated alongside these grant agencies. These accelerator programmes typically offered very early-stage capital as well as structured startup development programmes in exchange for equity in the startup. The VCs that fund pre-Series A and Series A deals were usually the next funding option when startups reached higher levels of growth. However, these agencies, accelerators and VCs understandably can only fund a limited number of startups and SMEs.

To compound the matter further, the number of startups seeking capital was growing. Around 2013-14, the government initiated lines of actions to spur the growth of startups in the country as well as encourage existing SMEs to digitise their operations. A new government agency, then known as MaGIC (Malaysian Global Innovation & Creativity Centre) was launched in April 2014, with U.S. President Obama present. It offered programmes and assistance to technology and social impact startups. The government also launched an accelerator programme called Global Accelerator Programme (GAP Accelerator).

The government initiatives had the desired impact by creating a wave of startups. Technology startups typically need to fundraise throughout their stages of growth. As a result, the number of companies that sought to raise funds grew sharply.

It must also be noted that in the wider context, Malaysia has always been an entrepreneurial nation. Even without the initiatives to grow the technology ecosystem in Malaysia in 2013/2014, SMEs have always dominated business sectors in Malaysia. Quite simply put, Malaysia has a large number of SMEs relative to its population. Malaysia, with an estimated population of 32.7 million in 2021, recorded a whopping 1,226,494 MSMEs.[2] Thus, there is no shortage of companies looking for capital.

The arrival of ECF opened up a new channel of fundraising that helped to address the funding gap.

Malaysia Co-investment Fund

The announcement by the government that it would co-invest alongside investors in ECF deals was another catalyst for the ECF industry. In November 2018, the Malaysian government announced in the 2019 Budget that it would allocate RM50 million to set up a co-investment fund. It is called the Malaysia Co-investment Fund (MyCIF) and it was set up specifically to co-invest in SMEs alongside private investors. The fund would co-invest exclusively on ECF and P2P Financing platforms. The initiative proved successful and additional amounts were allocated by the government in the 2020 and 2021 Budgets.

MyCIF was operationalised by SC. At launch, the co-investment criterion for ECF was set at a 1:4 ratio, where MyCIF would invest RM1 for every RM4 raised by the crowd, up to a maximum of RM1 million MyCIF investment per campaign.

MyCIF began disbursements in October 2019. Four months later, the world was hit by the COVID-19 pandemic. To sustain liquidity and investor confidence in the markets, MyCIF reacted quickly and made temporary adjustments by increasing the investment ratio to 1:2.

The MyCIF initiative had the desired impact. By the end of 2020, the ECF industry had grown by 458%. By 2021, the MyCIF fund reverted to the original 1:4 co-investment criterion.

The importance of MyCIF cannot be overstated. On one level, it aided more issuers to achieve their fundraising targets by funding the 'last mile' of their campaigns. This was done by MyCIF taking up remaining amounts after investors had committed the initial 80% when the 4:1 criterion was applied or 50% when MyCIF temporarily changed it to 2:1. In addition, this initiative by the government to co-invest alongside the crowd was viewed positively as it encouraged more investors to put funds into ECF deals.

The pandemic

While the COVID-19 pandemic was bad news for many industries, the ECF industry was impacted positively. The number of deals and amounts raised rose sharply over 2020 and 2021.

The reason for this was simple. The lockdowns which disrupted everyone's lives resulted in a massive acceleration of digital transformation. Consumers made a huge leap into online services. New startups were launched and existing businesses pivoted towards online offerings. Digital and online focussed businesses sought capital on ECF platforms and investors were ready to back them.

ECF platforms also adjusted their operations swiftly when lockdowns were imposed. They pivoted from physical roadshows and events to online pitches. The online events found ready audiences among people who were locked in their homes and with time on their hands.

The quality of the issuers

And finally, a lot of credit for the vibrancy of the Malaysian ECF industry must go to the quality of the companies that raise funds on the platforms. Investors put money into these companies in the hope that their investments will generate good returns over time. If the companies do well, not only will the investors put more funds in, their success stories will draw more investors into the industry.

By and large, the companies that raised funds on pitchIN have performed creditably. The oft quoted saying that nine out of ten startups fail does not hold true for ECF issuers. There is no industry data available, but on pitchIN the percentage of companies that ceased business operations is very low, at less than 3 percent.

The success stories far outnumber those failures. Six years into ECF in Malaysia, it is clear that the wisdom of the crowd is effective with regards to making investment decisions. One issuer has gone on to a successful listing on the Leading Entrepreneur Accelerator Platform (LEAP) market, four years after raising funds through ECF. A few other companies are well on their way towards initial public offerings (IPOs). A significant number of companies have raised subsequent funding rounds with VCs and institutional investors at higher valuations, some at up to 5- to 6-times in 3 years. One issuer raised RM3 million through ECF in 2018 at RM20 million valuation. In 2022, this company raised another RM17 million at RM100 million valuation.

The industry has also seen some exits when companies have been acquired. Other investors have enjoyed steady dividends from their investors. A number of private secondary transactions of shares between individuals' shares at higher prices have also taken place.

The quality of the deals has not only brought new investors to the industry. It also encouraged existing investors to invest more regularly. Nearly 15% of investors at pitchIN have made 2 or more investments. Twenty-six investors have invested in more than 10 deals and close to 100 investors have invested between 5 and 9 times.

The Future of ECF in Malaysia

While ECF in Malaysia has been an unqualified success, there is still plenty of potential to unlock. As mentioned earlier, the over 1 million SMEs and startups in Malaysia translate to a huge market size. On the investor side, awareness about ECF has reached only tech savvy people living in large urban cities, primarily in the Klang Valley and places like Penang and Johor Baru.

Another boost will come soon for the ECF industry as SC is allowing operators to submit proposals to operate secondary trading platforms that will enable trading of shares in companies that had raised funds through ECF campaigns. As secondary market platforms will add liquidity and exit options for investors, the industry hopes that it will bring even more participants into the industry.

One operator (pitchIN) has already confirmed that it will be launching a secondary trading platform this year. Over 140 companies have successfully raised funds on its platform, and when trading in their shares starts, there is belief that the excitement generated will take the industry to new heights.

It is also expected that more operators will over time start offering Sharia-compliant ECF deals alongside their current deals. Again, such offerings will draw another group of investors. Finally, deal sizes are expected to grow as larger companies are now allowed to raise funds through ECF platforms.

ECF is and will continue to be a very important fundraising choice for the heavily SME-centric Malaysian business sector.

Notes

1 Capital Market Masterplan 3, quoting MSME Finance Gap: Assessment of the Shortfalls and Opportunities in Financing Micro, Small and Medium Enterprises in Emerging Markets, International Finance Corporation, 2017.

2 Malaysia Statistical Business Register (MSBR) published by the Department of Statistics, Malaysia.

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A life-long entrepreneur, he has built multiple successful businesses. Kash was previously the founder and Managing Editor of MOBILE WORLD, a leading technology publication that was launched in 2002 and ran for 11 years. He also co-created GoMobile, a groundbreaking event that incorporated a large consumer expo, conference and an awards night.

LITO VILLANUEVA

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The Philippines: A New Digital Hotspot in the Asia Pacific

Introduction

In these past two years, we've seen how the norm was challenged and how the unusual became the routine. This pandemic has indeed proven to be the great disruptor of recent times. This is not just in the medical front, but more so in the socio-economic and financial aspects. The implementation of the necessary health protocols and lockdowns has shaken up various industries and businesses on a global scale, limiting operations and restricting face-to-face transactions and interactions.

In the latest Digital Banking Maturity 2020 study conducted by Deloitte Digital, it was noted that 60 percent of legacy banks have either closed or shortened the operating hours of their physical branches, 11 percent have turned off specific account opening methods, and 6 percent chose to limit the access of new clients to particular products and services. The Philippines industry projections also reveal that 50 to 60 percent of branch-based over-the-counter transactions have disappeared and have shifted to digital platforms. These figures are just snapshots of two glaring realities that: 1) traditional brick-and-mortar banking falls short in the face of a global disruptor; and 2) digital transformation is the saving that financial institutions must embrace in order to be future-ready and pandemic-proof.

If there is one positive thing that this pandemic has forced industry leaders to do, it is to reexamine and even challenge traditional banking structures and processes. This will allow them to have a better understanding of where their institutions stand now and to determine effective strategies to employ moving forward. The situation demands newer business models and not just innovative, but intuitive solutions from financial institutions, to properly and promptly address the changing needs of the times and market. This would thus require the deconstruction of existing paradigms and mindsets making the radical shift from bricks to clicks. To move forward is to ride the wave of digitalization. And for financial institutions to survive, they must learn how to go with the flow.

Employing Game-Changing Reforms

In the Philippines, challenger banks and new fintech players have started to reshape the country's financial ecosystem. To keep step with this influx, a number of milestone regulatory and enabling laws have been put in place at an accelerated pace. We saw the aggressive implementation of the Philippine Identification System Act (PhilSys), the National ID law, and the swift enactment of several legislative measures to further promote the Philippines' sustainable digital economy.

Priority economic measures enhancing the investment climate in the country have also been expedited. These include the amendment of various acts on foreign investments, public services, and retail trade liberalization law. The amended foreign investments act would now allow foreign nationals to own micro-, small and medium sized enterprises with a minimum paid-up capital of USD100,000, while the amended public services act allows up to 100 percent foreign ownership of such public services as telecommunications, railways, expressways, airports, and shipping industries. Under the amended retail trade liberalization law more foreign players will now be allowed in the retail market by lowering the minimum paid-up capital for foreign corporations.

On the regulatory front, the Bangko Sentral ng Pilipinas (BSP), the Philippines' central bank, has issued two landmark regulations: the digital bank licensing guidelines and the open finance framework. Their issue took place at the height of the pandemic, putting the BSP among the first central banks in ASEAN to quickly issue licenses to six digital banks. Three are currently operational, while the rest are expected to go live before the end of 2022. Issuance of additional licenses for new digital banks and electronic money issuers has been suspended for three years to assess the performance of the current players. The regulator has also announced its planned central bank digital currency sandbox initiative with pilot participants within the year.

So far, we have seen two digital unicorns from the telecoms industry emerge during the hard lockdown period: Mynt's GCash and Voyager's Maya (formerly PayMaya). It is likely that two more digital players will join the elite list by 2024. This is driven by the growing interest and demand from an expanding market bolstered by the extensive financial inclusion efforts from both the government and the private sector. This is also anchored on the BSP's digital payments transformation roadmap with two strategic outcomes: first is transforming at least 50 percent of retail financial transactions to digital, and second, is onboarding 70 percent of adult Filipinos to have transactional accounts by end of 2023. Given the exponential growth in digital adoption, these goals are expected to be met even before the deadline. Meanwhile, interoperable payments through the country's national retail payments systems InstaPay and PESONet have registered unprecedented growth both in gross transaction volume and value. This was further boosted by Executive Order 170 (s2022) issued by President Duterte adopting digital payments for government disbursements and collections. This growth is expected to continue beyond the pandemic.

On the flip side, cybercrime and fraud have been on the rise. Concerted efforts by the industry to roll out massive financial education and digital literacy campaigns have been put in place to address these threats. To further promote trust and confidence among digital users, the BSP aggressively pushed Congress to quickly pass the financial products and services consumer protection act.

Enabling digital infrastructure would not be complete without giving attention to inadequate telecommunications and data provision especially in hard-to-reach areas. This awareness prompted the government to quickly implement Executive Order 127 (s2021) allowing satellite broadband in rural areas for better Internet connectivity and data network access. This order made way for the entry of Elon Musk's Starlink satellite broadband, which made the Philippines the first country in the ASEAN region to have a facility with approximately 200 mbps capability specifically intended for Geographically Isolated and Disadvantaged Areas (GIDA).

Open Finance and Application Programming Interfaces

The open finance framework has accelerated the customer-centric product development cycle of digital finance solutions and platforms in the country by enabling banks, non-banks, fintechs, and other third-party providers to access financial data of consumers.

The digital disruption caused by a financial ecosystem largely driven by application programming interface (API) has cemented the place of digital challenger banks in this new banking landscape. The August 2020 *Banking Scene Report* reported that 480 million API calls were made in the United Kingdom for July 2020 alone, revealing the massive scale of third-party providers requesting access to a customer's bank account via APIs.

With the fast-changing financial landscape, there is no doubt that digital challenger banks are here to stay. They have emerged at the most opportune time when the confluence of technological advancement, evolving customer expectations and global disruptions have pushed the boundaries of traditional banking to new frontiers.

Generative Artificial Intelligence

Artificial intelligence (AI) has long been a cornerstone of any digital transformation. But as technology continues to evolve so does AI, which becomes smarter and more intuitive year after year. AI advancement has reached the point that it has become generative. With the wealth of data running in the cloud, it is now possible for industries to isolate, pluck out, and synthesize relevant data to come up with new products and services.

Generative AI now exposes the potential of how cloud-native data can be transformed to "synthetic data" and used to train other machine learning algorithms to customize inclusive digital products and services and even to detect fraud. Hence, AI may now identify patterns of consumer behavior, determine their pain points, and even tag suspicious digital transactions.

Moreover, generative AI has become more agile and can be scaled to perform its "policing task" even with multiple transactions happening at the same time. It is this generative function of AI that will prove useful for industries not only in addressing customer concerns almost in real-time, but also in strengthening cybersecurity measures.

Scaling of Digital Assets

Recognizing the agility and acceleration of digital payments, electronic money institutions (EMIs) and digital banks have started to venture in offering crypto investment services. Because of this, the BSP saw crypto transactions further spike in 2022 with the sustained increase in the use of virtual currencies in the payments and remittance domains as well as the delivery of other financial services. The developing positive attitude and consumer behavior of Filipinos toward digital transactions also reflect a strong indication of wider adoption of other digital financial services such as cryptocurrencies.

Based on the findings of the Philippines Fintech Report 2022, the country has also evolved as one of the "world's fastest adopters of cryptocurrency." Data from the BSP reveal that cryptocurrency transaction values booked a five-fold increase in 2020 mainly driven by the surge in the price of Bitcoins.

Moreover, a rise in crypto-friendly technology and blockchain developments has also created a dynamic and supportive environment for digital assets to flourish. This is complemented by the open mindset of regulators in understanding and, in effect, facilitating the transforming nature of the country's digital finance landscape. The role of regulators is vital in ensuring investor protection and cybersecurity. This also instills confidence in the industry and system. In fact, Binance, the world's largest crypto exchange, will soon start operations in the Philippines. As of March 2021, the BSP has recognized 17 industry-compliant virtual currency exchanges. It also initiated collaboration with the Philippine Digital Asset Exchange (PDAX), the country's homegrown cryptocurrency exchange to start the development of a crypto regulatory sandbox.

Issuance of BSP Circular 1108 (s2021), which reiterates the regulation of Virtual Asset Service Providers (VASPs) operations in the country, redefined virtual currency exchange as virtual assets. This leads to the direct regulation of the use and exchange of cryptocurrencies or crypto assets.

Other government agency efforts have also focused on this. The Securities and Exchange Commission (SEC) is currently working on the guidelines for cryptocurrency trading in the country. With the spike of mass market interest in cryptocurrency exchange at the height of the pandemic, the SEC issued 33 advisories that inform and encourage the public to be more discerning in engaging with high-risk crypto activities to avoid scams. It also issued several cease-and-desist orders to noncompliant and unrecognized cryptocurrency operators in the country.

Keeping the digital finance industry aligned with the regulators is critical. The industry must remain supportive of the development of a crypto regulatory sandbox to better map out the future of cryptocurrency exchange in the country.

Decentralized Finance and Non-Fungible Tokens

Hand in hand with the emergence of blockchain technology is the rise of decentralized finance or DeFi. As DeFi solutions and applications continue to gain ground, the industry sees this digital revolution as another transformative driver of financial inclusion.

With decentralized finance solutions such as "smart contracts" established on the blockchain, more traditional barriers to financial inclusion could be removed, opening more financial options and opportunities to ordinary Filipinos. This became more evident with the pandemic catalyzing the trend. As several businesses closed shop and many Filipinos lost their jobs, ordinary citizens started to see the value of non-fungible tokens (NFTs) as an investment and income-generating ventures. NFTs are virtual tokens that represent real-world items like music, art, in-game items and videos which are exchanged online using cryptocurrency. This "gold rush" in NFTs is mirrored by the sudden interest, especially in the mass market, to gam-ified NFT platforms like Axie Infinity.

In a report published by Business World (Lacsamana, 2022), the Philippines topped the list of 20 countries in NFT ownership. This is largely an effect of the pandemic that instantly displaced thousands of working Filipinos, including overseas Filipinos who lost their jobs, who turned to NFT-gaming platforms to earn income.

While many ordinary Filipinos still need to understand NFTs, the growing interest among the mass market suggests a bright prospect for DeFi solutions and platforms to thrive in the country.

Data Analytics for Customer-Centric Solutions

As the country moves forward with a highly interoperable financial ecosystem that mostly runs on the cloud, data generation grows exponentially. An article by Information Week reported that people generated 1.7MB of data every second in 2020. This corresponds to the flood of customer and user data available especially with the emergence of more digital banks, crypto currencies, e-wallets and e-commerce platforms. This shows that data is the new oil that can be tapped and monetized. It is high time every industry player incorporates open data in its strategies, whether for innovation or monetization, as data will only continue to be an important asset in the industry.

Data has played a big role in keeping Philippine financial institutions and other fintech players at the forefront of the inclusive digital finance push, despite the pandemic. In fact, the pandemic was the time when data was most valuable.

Given these technological disruptions, the whole digital finance industry realized that the most important aspects of customer-centric and inclusive digital finance always rely on the consumer's insight generated by a topnotch data analytics structure. Data analytics has enabled the digital finance ecosystem to identify the pain points of various market segments, and consequently develop tiered platforms that will specifically address customers' unique needs.

Communicating these innovations through data-driven content marketing became key to letting customers know that the technology they need to survive the pandemic and beyond is now more accessible. This is why the platforms have been contextualized, focusing on the specific journey of each customer for each market segment.

Addressing Challenges on Cybersecurity

Industry players who want the benefits of open finance and open data must also be accountable by responsibly building a sustainable ecosystem for it to flourish. This means investing in the infrastructure to make this possible. Infrastructure involves the technology, knowledge, and actual manpower needed to make open data credible, secure, and reliable.

An open-data ecosystem can only be effective with a certain level of trust among its participants. Without trust, market players and clients may opt out of the ecosystem altogether. Financial data are a particularly sensitive domain that involves a lot of regulations. This then brings to the fore the industry mandate to constantly strengthen cybersecurity measures.

To have a nimble and secure digital finance ecosystem means to invest in making the platforms and services cyber-resilient. This begins with the understanding of the current trends and technologies that will enable a more secure digital space.

A robust open-data financial ecosystem provides strong consumer protection and maintains data integrity and security across the ecosystem. It is also able to automatically detect and swiftly act on problematic or suspicious data in order to keep the ecosystem in check.

This should be complemented by a whole-of-institution approach that employs a "zero trust strategy." This fortifies the operation of data systems and platforms in such a way that requires all users, whether within or outside the institution, to be authenticated and continuously verified before being authorized to access and use them. This includes cybersecurity drills, regular audit of devices and systems, and constant awareness campaigns on data privacy laws, compliance measures, and trends which are effective ways to safeguard financial institutions and the industry as a whole.

Depending on existing regulations that dictate the country's level of data standardization and the breadth of data sharing, there is a lot of potential value from open data. When done right, open data will definitely take us a step closer to our goal of having sustainable inclusive digital finance and a more robust and cash-lite economy.

'Innovation for the People'

One can affirm that there is no stopping the Philippines from expanding its digital terrain and becoming one of the newest industry hotspots of competitive financial technology in the region. This is rooted in embracing an industry-wide culture that welcomes digital transformation.

By employing innovative technologies and strategies, the country has bolstered its cyber-resilient digital infrastructure. It has cultivated an encouraging financial landscape for consumers founded on trust and customer centricity. The Philippines has facilitated an enabling environment for financial institutions and other fintech players to continuously innovate and deliver hyper-personalized services that broaden the industry's reach to the unbanked and underserved.

Ultimately, what makes the Philippines a new financial technology hotspot in the Asia-Pacific region can be summed up in one principle: "Making innovations work for the people."

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Lito is the Philippines' award-winning thought leader on digital transformation and inclusive digital finance. He has over 20 years of experience in banking, telecommunications, payments, development finance, advisory, RegTech, and Fintech. In his career, he has covered over 30 markets in Asia, Europe, Middle East, and Africa in various roles for The Economist, Land Bank of the Philippines, Philippine Long Distance Telephone Company (PLDT) -Smart Communications, Voyager Innovations, PayMaya, International Finance Corporation of the World Bank Group, and Visa. He collaborated with regulators in promoting enabling regulations towards inclusive innovations and interoperability. As a digital inclusion and transformation advocate, he institutionalized the country's first code of conduct and code of ethics, providing a wider industry framework towards greater consumer protection in partnership with all regulators.

Lito finished the Cambridge Intellect Leadership Programme on Digital Transformation by Design in 2019 at the University of Cambridge Judge Business School Executive Education in the United Kingdom. He also earned two graduate degrees: Master of Arts in public administration with magna cum laude honors from the University of Santo Tomas (UST) and Master in National Security Administration from the National Defense College of the Philippines as a state scholar, and its youngest graduate, thus far. His undergraduate degree is in political science also from UST.

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An Analysis of Thailand's Digital Asset Market: Current Situation and Future Outlook

Introduction

In 2021, Thailand was ranked 12th globally in terms of crypto adoption[1] and 3rd globally in terms of decentralized finance (DeFi) adoption[2] (Chainalysis, 2021). It appears that Thais are more enthusiastic about digital assets compared to those in other parts of the world. This article examines Thailand's digital asset market and its ecosystem. The author starts the discussion by explaining what constitutes "digital assets" under Thai law. The subsequent sections include analyses of the investors, major players and their recent developments, and the regulators and their recent developments. Finally, the last section concludes the article and discusses future outlook of the Thai digital asset market.

"Digital Assets" under Thai Law

Thailand issued its first law relating to digital assets, the Emergency Decree on Digital Asset Businesses B.E. 2561 ("the 2018 Decree"), in May 2018. The 2018 Decree states that "digital asset" is comprised of "cryptocurrency" and "digital token." It defines "cryptocurrency" as an electronic data unit created for the purpose of use as a medium of exchange for the acquisition of goods, services, or any other rights. It classifies "digital token" into either "investment token" – an electronic data unit for the purpose of specifying the right of a person to participate in an investment, or "utility token" – an electronic data unit for the purpose of specifying the right of a person to acquire specific goods, services, or rights. Companies conducting certain activities relating to "digital assets" are to be regulated.

Later documents issued by Thailand's Securities and Exchange Commission (SEC) classify "utility token" into "ready-to-use utility token" and "not-ready-to-use utility token." The first type represents utility tokens that can be used to redeem goods, services, or rights from the first day the tokens are issued. The latter type represents utility tokens that can be used to redeem goods, services, or rights that will only become available in the future. Currently, the public issuance of investment tokens and not-ready-to-use utility tokens requires an approval, whereas the issuance of ready-to-use utility tokens does not. Non-Fungible Tokens (NFTs) that do not represent future claims are considered ready-to-use utility tokens. Therefore, NFTs and NFT marketplaces are not regulated under Thai law. In addition, some ready-to-use utility tokens have already been issued to the public without the need for approval. However, SEC is considering regulating the issuance of ready-to-use utility tokens. It recently launched a public consultation to gather comments before issuing formal guidelines. The hearing recently ended on 29 June 2022.[3]

Investors

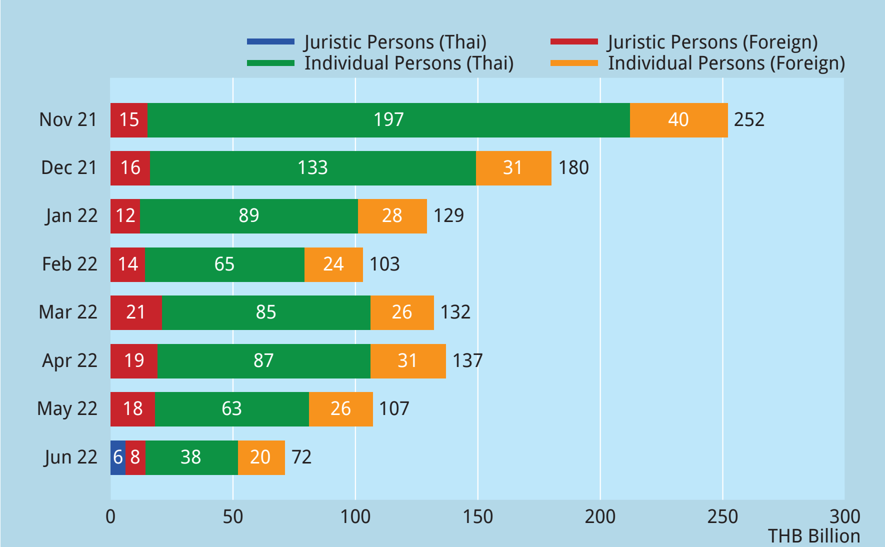
The fact that Thailand ranked high globally in terms of crypto and DeFi adoption indices requires our attention to examine Thailand's digital asset market and the investors in the market. According to the data provided by SEC (shown in Figure 1), digital asset trading volume in Thai exchanges averaged THB139 billion per month (from November 2021 to June 2022). At its peak, the trading volume was THB252 billion per month (November 2021). The period coincided with the sharp increase and the peak price of Bitcoin. Currently, due to the decline of cryptocurrencies' prices, the trading volume declined to about THB72 billion per month (as of June 2022).[4]

Even during the current bear market, the total number of cryptocurrency trading accounts in Thailand was still increasing until May 2022 but stabilized after that. Figure 2 shows that there were around 1.5 million accounts at the end of August 2021. Recently, there are almost 2.9 million accounts (as of June 2022). However, the number of active accounts has declined since the beginning of this year due to the bear market. The most popular coins for Thai investors during 2022 are Tether, Bitcoin, Ethereum.

A study by SEC reported that around 46% of Thai digital asset investors invest for short-term speculations. About 33% of them anticipate long-term returns, whereas 11% hold digital assets as savings.[5] Another study by the Stock Exchange of Thailand (SET) and the Faculty of Economics, Chulalongkorn University reported that the new-generation investors are very enthusiastic about investing in cryptocurrencies.[6] These increasing interests are likely to continue. However, the current market downturn along with the recent Terra-Luna crash will significantly slow down this trend.

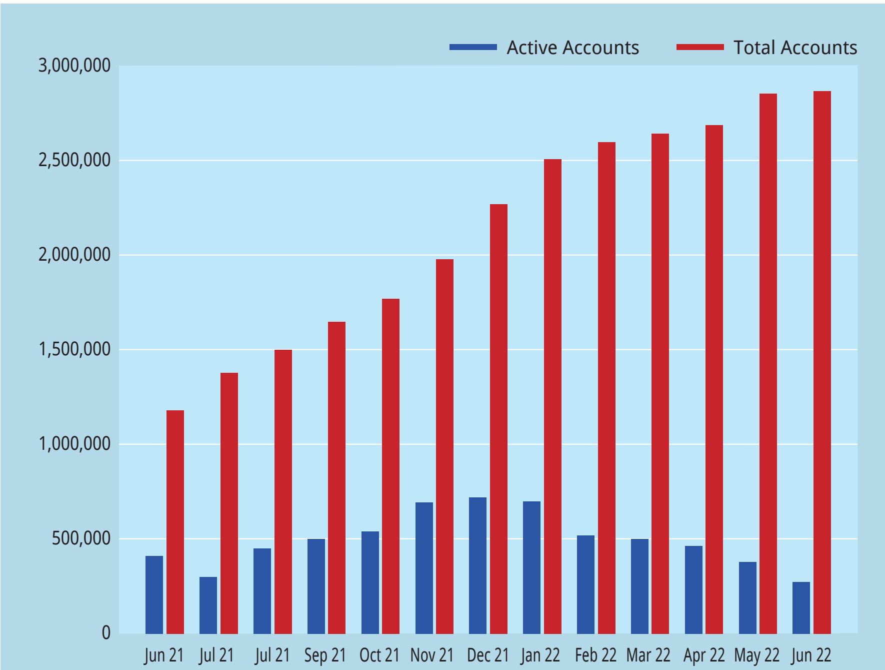
It is reported that many Thais also invest in digital assets via digital asset exchanges outside of the country. Currently, there is no official record of the actual volume of these trades, but it is believed that the volume that Thais trade offshore may be more than the volume officially recorded in the Thai market.

Figure 1: Digital Asset Trading Volume in Thai Exchanges



Source: The Securities and Exchange Commission, Thailand

Figure 2: Number of Cryptocurrency Accounts in Thai Exchanges



Source: The Securities and Exchange Commission, Thailand

Major Players and Their Recent Developments

There are five types of digital asset operators according to Thai law, namely, digital asset exchanges, digital asset brokers, digital asset dealers, digital asset advisory services, and digital asset fund managers. These businesses are regulated by SEC and need its approval to obtain their licenses. Another type of regulated player in this market is Initial Coin Offering (ICO) portals which are providers of electronic systems for facilitating the offering of newly issued digital tokens.

The market is led by Bitkub Capital Group Holdings ("Bitkub Group"). Bitkub Group currently has 7 subsidiaries, conducting businesses in major areas relating to the digital asset ecosystem. The most notable subsidiary, Bitkub Online Co., Ltd. ("Bitkub Online"), is the largest digital asset exchange in Thailand. Bitkub Group also established its own blockchain system called Bitkub Chain with its native utility token called KUB coin. The fact that they established their own blockchain ecosystem allows them to create many innovative products/projects on top, such as NFT marketplace (and NFTs) and metaverse. Other notable players in the digital asset exchange market include Zipmex, Satang, and Upbit.

Recently, there have been many big movements from major Thai commercial banks, especially Siam Commercial Bank and Kasikorn Bank, in the digital asset market. In November 2021, SCBx (a recently restructured group holding company of Siam Commercial Bank) made a major announcement of acquiring Bitkub Online from Bitkub Group in the amount of THB17.85 billion.[7] If the deal goes through, SCB Securities Co., Ltd. (SCBS) will become 51% owner of Bitkub Online. Initially, the transaction was expected to be completed by Q1 of 2022. However, on 7 July 2022, SCBx issued a statement to SET disclosing that the deal was supposed to be conditional upon satisfactory due diligence results. Currently, they are still in the process of due diligence and discussion with regulators. Therefore, the transaction is now postponed. They did not give any confirmation whether the deal is still to be completed.[8] Many have interpreted this message as a no-go. Other subsidiaries of SCBx have also been active in the digital asset market. Token X, a licensed ICO portal, has recently launched BNK governance tokens, voting tokens for a popular girl-group band. SCBS applied for and received its digital asset exchange license last year. SCB10x, the group's investment arm, has been investing heavily in blockchain-related projects such as DeFi and metaverse.

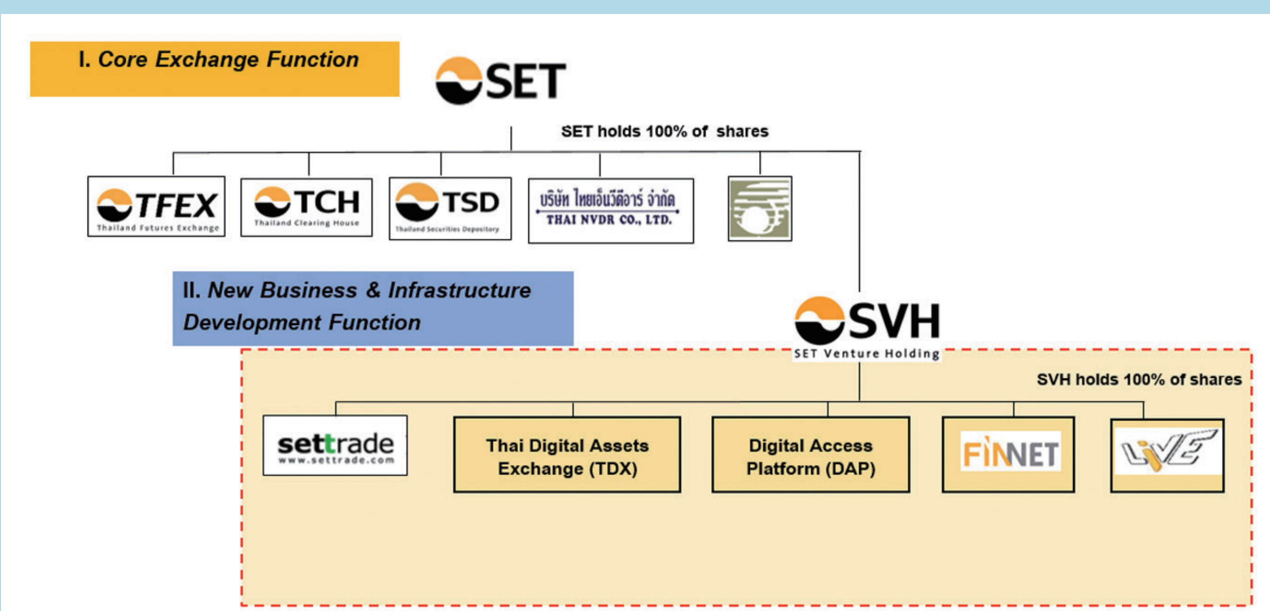
For Kasikorn Bank, its technical arm, Kasikorn Business Technology Group (KBTG), has introduced an ICO portal company called Kubix.[9] Kubix, received its ICO portal license last year and recently launched Destiny tokens, investment tokens for a famous Thai movie project. The group has also established an NFT marketplace called Coral. Beacon Venture Capital, the group's investment arm, recently made an investment in Cryptomind Group, a local digital asset business.

Foreign companies are also entering Thailand's digital asset market. Binance, the largest crypto exchange in the world, has made a deal with Gulf Energy Development PCL, a listed energy company in Thailand. They recently established Gulf Binance Co., Ltd. to operate as a digital asset exchange in Thailand.[10] In early 2022, Coinbase, a listed crypto exchange in the United States, was said to have made an acquisition offer to Zipmex but eventually opted for a strategic investment instead. In July 2022, Zipmex faced a serious financial trouble and had to halt withdrawals relating to its ZipUp product which was seriously affected by the fall out of Barbel Finance and Celsius Network. At the time of this writing, Zipmex is filing for bankruptcy protection in Singapore.[11]

Another major upcoming player of the digital asset market is SET. Its subsidiary, Thai Digital Asset Exchange (TDX), has recently received a license from SEC and will be launching its digital asset platform in the third quarter of 2022 (Figure 3 shows the shareholding structure of the SET group). According to SET executives, TDX will be an open platform to link the trading of traditional and digital assets. It will provide trading, settlement, and internal wallet services for investment tokens and utility tokens. The platform will also serve as an application programming interface and portal for collaborators.[12]

The remaining players in the digital asset market[13] are the unregulated players. During the 2021 bull market, Thais have been enthusiastic about NFTs, DeFi platforms, play-to-earn games (i.e., GameFi), and blockchain-base metaverses. Except for Bitkub Group (which has established an NFT marketplace and a metaverse) and Kasikorn Bank (which has established an NFT marketplace), most of the players in this unregulated territory are startups. Some DeFi platforms and play-to-earn games have failed due to either poor algorithms or malice, but the damage is still

Figure 3: SET Group and Shareholding Structure



Source: Stock Exchange of Thailand

limited. NFTs, including metaverses' land NFTs, have skyrocketed last year. However, Nakavachara and Saengchote (2022) have pointed out that the significant increase in their prices could potentially lead to a bubble.[14]

The Regulators and Their Recent Developments

The Securities and Exchange Commission, Thailand

Principally, the Ministry of Finance is responsible for the enforcement of the 2018 Decree, under which the digital asset businesses are regulated. However, SEC has been granted certain regulatory powers to issue rules, regulations, and notifications, outlining the details of how these digital asset businesses are regulated. Therefore, SEC regulates these businesses and approves their licenses. Recently, there have been a few major developments from SEC as follows.

Regulating ready-to-use utility tokens: Currently, the public issuance of investment tokens, and not-ready-to-use utility tokens is regulated, whereas the issuance of ready-to-use utility tokens is not. According to SEC, some digital tokens may have been issued as ready-to-use utility tokens but were treated by the market participants as investment tokens. Therefore, SEC is to propose a restriction on the issuance of ready-to-use utility tokens to make sure that investors are protected. The issuer needs to disclose important information both prior to and after the offering. There will also be a limit on affiliated person's token-holding proportion to prevent risk of unfair actions. A public consultation has been issued to gather opinions on the draft regulation. The hearing recently ended on 29 June 2022.[15]

Banning the use of digital assets as means of payment: Recently, SEC, in consultation with the Bank of Thailand (BOT), has issued a regulation prohibiting licensed digital asset businesses from supporting and facilitating the use of digital assets as means of payment for goods and services. The rules were effective as of 1 April 2022.[16] The reason for the ban was the fact that the widespread adoption of digital assets as a means of payment could create significant risk for the country's financial stability and overall economic system. In addition, customers and businesses could face potential risks relating to price volatility, data security, and money laundering.

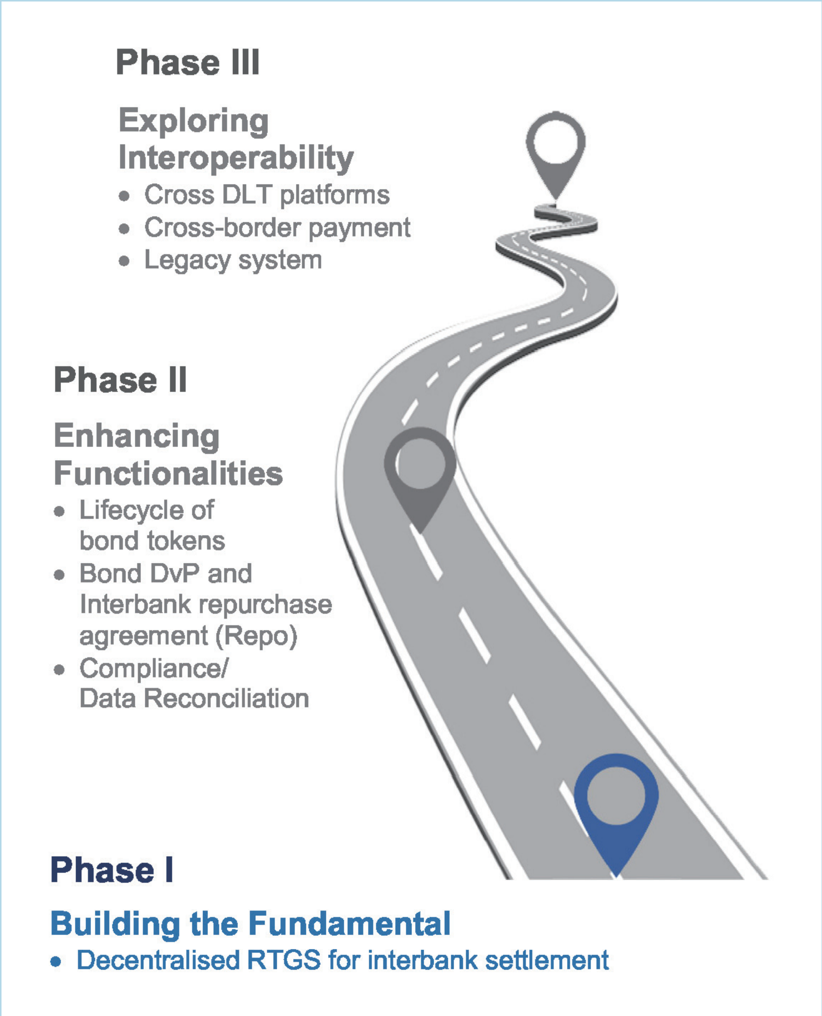
The Bank of Thailand

BOT promotes a stable financial environment to achieve sustainable and inclusive economic development for Thailand. Regarding digital assets, BOT has worked closely with SEC on issues relating to financial stability, making sure that systemic risk and regulatory arbitrage are minimized. For example, BOT supported SEC's regulation prohibiting the use of digital assets as means of payment due to potential systematic risks. In addition, BOT has a role to regulate financial institutions to ensure that they have a proper risk management system. In terms of digital assets, BOT is drafting a regulation to cap investments in digital assets by commercial banks and their subsidiaries at 3% of their capital. This is to ensure that commercial banks wanting to invest in digital assets have enough reserves to handle the risk.[17]

One important development of BOT, relating to the digital asset ecosystem, is the establishment of the Central Bank Digital Currency (CBDC) project. There are two parts of the project, namely, the wholesale CBDC and the retail CBDC.

Wholesale CBDC in Thailand (Project Inthanon): BOT initiated a wholesale CBDC project, Project Inthanon, beginning in 2018. The project was carried out in three phases during 2018 to 2020 (Figure 4). In the first phase, BOT, along with eight

Figure 4: The Three Phases of the Inthanon Project

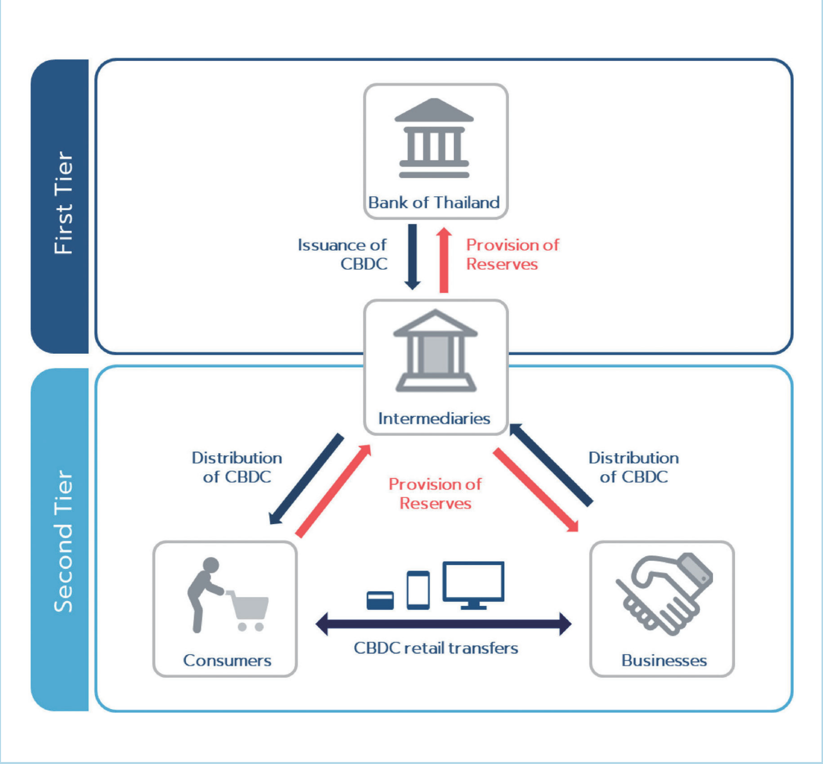


Source: Bank of Thailand

commercial banks, namely, Bank of Ayudhaya, Bangkok Bank, Krung Thai Bank, Kasikorn Bank, Siam Commercial Bank, Thanachart Bank, Standard Chartered Bank, Hong Kong and Shanghai Banking Corp., developed and tested a proof-of-concept of domestic wholesale fund transfer among the group using Distributed Ledger Technology (DLT). This phase of the project was concluded in January 2019. Phase 2 of the project aimed for a proof-of-concept of using DLT for bond tokenization and interbank repurchases. This phase was concluded in July 2019. Phase 3 of the project involves cross-border payments with another central bank, namely, the Hong Kong Money Authority (HKMA). The success of the DLT cross-border fund transfer between the two central banks, the Inthanon-LionRock Project, became a fundamental for building a multi-CBDC platform for international payments between BOT, HKMA, the Central Bank of the United Arab Emirates, and the People's Bank of China in the multi-jurisdictional context (mBridge Project).

Retail CBDC in Thailand (Digital Baht): In 2021, the Bank of Thailand announced that it would start a retail CBDC project in Thailand. The motivation was the notion that private digital currencies have become widespread, increasing the risk to the country's financial and monetary stability. The existence of retail CBDC can provide an alternative means of payment, thus reducing such risk. In addition, retail CBDC can serve as an alternative digital money that is accessible, safe, and reliable. The technology will provide a foundation for open digital payment infrastructure allowing for collaboration and innovation. According to Bank of Thailand (2021), BOT has conducted some initial assessment of the design of retail CBDC. It is likely that such CBDC will not be interest-bearing. In addition, it is likely that the issuance and distribution model would be two-tier, with financial intermediaries handling transactions with customers and businesses (Figure 5). At the time of this writing, the most recent public communication from BOT about the project was by the BOT governor at the World Economic Forum's Annual Meeting in May 2022. He mentioned that BOT will launch a "limited pilot" for retail CBDC in the fourth quarter of this year. In addition, he stated that the need to roll out (retail) CBDC (fully) is not that high since existing alternatives such as bank transfers, PromptPay and QR payments are already seamless.[18]

Figure 5: Two-Tier Issuance and Distribution of Retail CBDCs



Source: Bank of Thailand

Concluding Remarks

The future of the digital asset market is VUCA–volatile, uncertain, complex, and ambiguous. The fact that there is no proper price formula for cryptocurrencies and unbacked digital tokens makes it hard for anyone to make any realistic prediction on the prices, and thus the entire market. However, investors have seen easy money being made quickly, and thus are willing to jump into the market. That is why we observed the money went in and will continue to go in as long as there is still upside potential. The current bear market may slow them down this year and next year. However, the trend is still there. There are companies that see opportunities in this market and believe in the potential of blockchain technology, and thus are also jumping in. That is why we observed swift technological advancement and innovation in recent years. This trend is expected to continue.

For Thailand, investors have been enthusiastic. Also, there have been a lot of movements by both big and small players in the digital asset market. Bigger players, including commercial bank subsidiaries, focused on regulated businesses such as digital asset exchanges and ICO portals, whereas startups tried to expand into unregulated territories such as DeFi platforms, play-to-earn platforms and metaverses. Regulating a VUCA industry can be challenging. In addition, the fact that the market and its participants move very quickly make it harder to find an "optimal" way to regulate–allowing innovation to prosper yet making sure investors are protected. Thai regulators use public consultation to gather opinions prior to issuing their regulations. They pushed back when necessary but sometimes made unpopular decisions to ensure that the risks relating to the country's financial stability and overall economic system are minimized. External factors will also play a crucial role. Since the markets are interconnected, policies implemented by other countries, situations faced by global players will have an impact on Thailand's digital asset market and Thai investors.

The future of this market is uncertain. At one extreme we may see a digital utopia and at the other extreme we may see a catastrophe. In fact, the possible future will lie in between the two. Where in the spectrum we will end up will depend on the effort everyone puts in to creating long-term sustainability of this digital asset industry.

Notes

1 Vietnam ranked 1st, India 2nd, and Pakistan 3rd.

2 The United States ranked 1st and Vietnam 2nd.

3 https://www.bangkokpost.com/business/2318970/sec-sets-out-stricter-rules-for-token-icos

4 https://www.sec.or.th/TH/Pages/WeeklyReport.aspx

5 https://www.sec.or.th/TH/Template3/Articles/2565/170565.pdf

6 https://classic.set.or.th/dat/vdoArticle/attachFile/AttachFile_1642401066138.pdf

7 https://www.scb.co.th/en/about-us/news/nov-2021/scbs-bitkub-online.html

8 https://www.thaienquirer.com/41613/scb-delays-plans-to-acquire-bitkub-after-crypto-prices-tank/

9 https://www.kasikornbank.com/en/news/pages/kbtg-kubix.aspx

10 https://techsauce.co/news/gulf-gulf-binance-sale-buy-digital-asset

11 https://cointelegraph.com/news/breaking-zipmex-suspends-withdrawals-as-ceo-denies-financial-trouble-rumors
https://www.reuters.com/technology/crypto-platform-zipmex-files-bankruptcy-protection-singapore-2022-07-29/

12 https://www.bangkokpost.com/business/2313502/tdx-preps-trading-services-for-digital-tokens

13 The author looks at digital assets in a broader term, beyond the types that are regulated under Thai law.

14 https://www.bangkokpost.com/business/2297734/academics-issue-alert-on-metaverse-land-bubble

15 https://www.bangkokpost.com/business/2318970/sec-sets-out-stricter-rules-for-token-icos

16 https://www.sec.or.th/TH/Pages/News_Detail.aspx?SECID=9353

17 https://www.bangkokpost.com/business/2284914/bot-eyes-higher-bank-capital-reserves

18 https://cointelegraph.com/news/wef-2022-bankers-at-wef-see-the-need-for-caution-and-speed-on-central-bank-digital-currencies
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VIETNAM FINTECH CLUB

Vietnam's Fintech Market in the Digital Era

The Vietnam Fintech Market at a Glance

The COVID-19 pandemic has spread with great speed and impacted negatively all industries around the world. It has disrupted all economies and posed huge challenges to national leaders to maintain the sustainability of their countries. Consumers' behavior and demand have been changed in response to the COVID-19 pandemic bringing a good opportunity for Fintech companies to increase their share.

According to the *Fintech in ASEAN 2021* report published by United Overseas Bank, PwC, and Singapore FinTech Association, the ASEAN region witnessed great growth in fundraising. The amount of rebounding funding for ASEAN Fintech hit over USD3.5 billion in 2021 which was 3.2 times the USD1.1 billion figure in 2020.

As can be seen in Figures 1 and 2, Singapore, Indonesia, and Vietnam lead the region in Fintech funding. Vietnam joined the ASEAN top three in 2021 with its stellar result of USD350 million, accounting for 11% of the total funding in the ASEAN region.

According to Vietnam General Statistics Office, 69.3% of the country's population of 98.51 million in 2021 is between the ages of 15 and 64. As reported by We Are Social, 70.3% of the population use the internet and there are 154 million mobile connections of which 64% use 3G/4G. With a young population and high rate of mobile connectivity and internet usage, smartphones are used frequently for various purposes in daily life including shopping (68.5%), banking and finance (40.1%), and entertainment (83.4%). The young generation will be the momentum to push the digitization of all industries in Vietnam, especially digital banking and Fintech.

The Fintech market in Vietnam is expected to hit USD18 billion in 2024 with highly competitive rate according to the forecast by Robocash. Fintech in Vietnam provides customers a fast, convenient and transparent solution at lower cost than traditional financing products. In the banking and finance sector, Fintech companies are supporting the financial inclusion of the government and serving the non-bank and/or underbanked segment of the population where the network of traditional banks cannot reach. One-hundred-fifty Fintech companies are doing business in

Figure 1:Fintech Funding Amount by Country

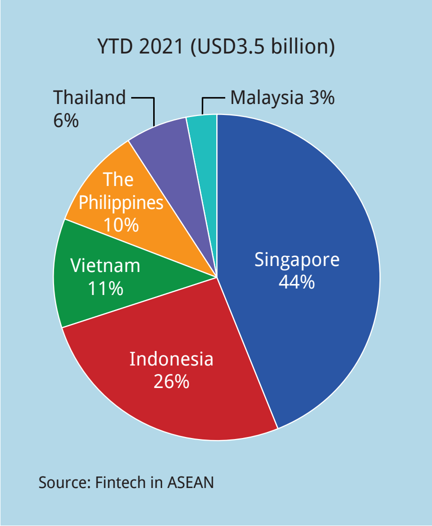
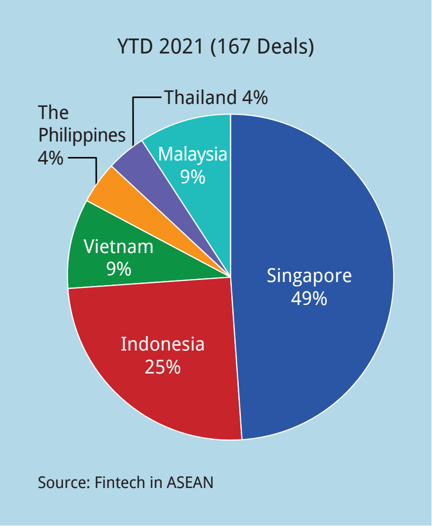


Figure 2: Number of Fintech Deals by Country



Vietnam in a wide range of operations including intermediary payment services, peer-to-peer (P2P) lending, crowdfunding, blockchain, remittance, and insurance.

Although Vietnam's Fintech companies are attracting the attention of investors all over the world, most companies are just in the early stage. According to information in a private survey by the State Bank of Vietnam (SBV) in 2021, many Fintech companies are newly established and small in scale. Forty-seven percent are at the starting line and have not yet hit breakeven; 28% are in the development stage, with minimum viable product launches and sales volumes within the last 6 months; 13% are in the development stage of their business models; 9% are earning a profit; and 3% are in the proof-of-concept phase and have not gained sales revenue.

Only intermediary payment services are clearly regulated under Vietnamese law; the remaining sectors of the Fintech industry have not been recognized officially and do not operate under a legal framework.

The leading segment of Vietnam's Fintech market is mobile wallet and payments, with a 31% share reaching USD12,922 million in 2021 (Figure 3). Amid the COVID-19 pandemic, Vietnamese consumers are changing from using cash or traditional contact payment systems to contactless payment methods including contactless cards (The National Payment Corporation of Vietnam [NAPAS] card or card schemes like Visa and Mastercard), QR payment (VietQR and Ewallet QR) and transfers through the NAPAS 247 provided by NAPAS.

Card payment: According to the direction of the SBV, by 2021 Vietnamese card issuers shall migrate all their magstripe cards to Vietnam Chip Card Specification Cards with NAPAS brand which comply with EMVCo. and the SBV Framework to provide the highest security standards to customers. The NAPAS chip card can support transactions in either contact or contactless mode to offer the most convenience to clients. All card schemes promote cashless payments, giving the most attractive benefits to all clients and making payments more competitive. According to the annual report of the Vietnam Bank Card Association, the total number of cards, including domestic and international cards, in use by the end of 2021 was over 120 million with USD128 billion total usage.

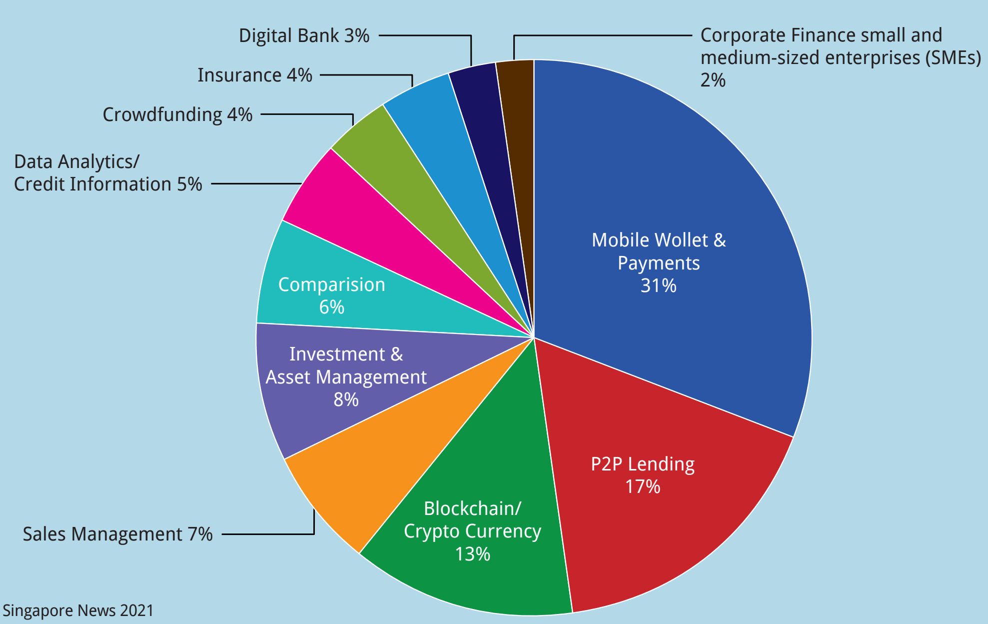
QR payment: VietQR is the brand of multi-purpose QR payment in Vietnam and can facilitate both payments and transfers. It was introduced to the market in March 2022 when NAPAS, the national switching company, cooperated with National Interbank Transaction Management and Exchange Co., Ltd. (NITMX) of Thailand to open a bilateral connection allowing Thai travelers to make QR payments at VietQR acceptance points in Vietnam via Thai Mobile Banking/Payment application, and vice versa.

With the success of cross-border QR payment, NAPAS launched NAPAS 247 real time transfers with VietQR to allow originators to transfer funds to beneficiaries by scanning VietQR without manually keying in account information. This product has been welcomed enthusiastically and provides a truly satisfactory solution not only for individuals but also for small and medium-sized enterprises and other corporates. Mobile wallets notably MoMo, Moca by Grab, ZaloPay, Viettel Pay and Shoppee Pay are playing a vital role in Vietnam's payments market for QR payment, utilities payment, e-commerce, and others.

Fund transfer: In Vietnam, transfers are now increasingly popular in retail payment for sending money from buyer to seller. Customers transfer funds for payment by inputting the beneficiary's account rather than paying by QR or card. Currently, there are two different fund transfer systems: Interbank Payment System (IBPS) which is a batch transfer system operated by the SBV and NAPAS 247 fund transfer operated by NAPAS. In 2021, IBPS processed 125 million transactions and 1.8 billion transactions were processed through NAPAS 247 system.

P2P lending: Approximately forty companies in Vietnam provide P2P lending services. Outstanding brands in this area are Tima, Trust Circle, VayMuon, Lendmo, WeCash, and Interloan. The SBV expressed the view that P2P lending will be useful for

Figure 3: Vietnam's Fintech Market by Segment, 2021



Source: Fintech Singapore News 2021

financial inclusion, restricting usury, and expanding the credit distribution channel to everyone, especially to disadvantaged social groups. However, lacking a legal framework, P2P lending has many potential risks, including privacy risk, lending risk, liquidity risk, Anti-Money Laundering (AML) risk, and cybersecurity risk, and is having a negative and unsustainable impact on the entire financial system in Vietnam.

Blockchain: Blockchain technology including cryptocurrency and central bank digital currency (CBDC) is controversial in Vietnam since cryptocurrency has not been recognized as a legal payment method or asset. The use of cryptocurrency is prohibited nationwide by official guidance of the SBV. CBDC is under study by the SBV and relevant ministries and will be considered carefully by authorities. On May 17, 2022, the Vietnam Blockchain Association was established by Decision 343/QD-BNV of the Ministry of Home Affairs. With its establishment, the association expects to apply blockchain technology to all industries, contribute to the digital economy and make Vietnam into one of the most promising lands for blockchain in the world.

Mobile money: Vietnam's Prime Minister signed Decision 316/QD-TTg dated March 9, 2021, to pilot telecommunication accounts for low-value commodities and services. The SBV gave approval for VNPT, Mobifone, and Viettel to pilot telecommunication accounts starting from November 18, 2021 to November 18, 2023. By April 2022, Vietnam had over 800,000 mobile money accounts according to the Ministry of Telecommunication and Information.

Challenges for Vietnam's Fintech Market

Legal framework for Fintech

Vietnam has not completed the legal framework for Fintech company operations except for payment intermediary services. Absence of a legal framework presents potential risks for the market and for clients. Some risks can be noted:

- Risk of market abuse from Fintech companies that are not managed and supervised by authorities. Lack of a legal framework and loose supervision can increase the number of small and medium-sized enterprises (SMEs) or start-up companies with little experience and knowledge that provide Fintech products and services. Loose supervision due to lack of legal framework can lead Fintech companies to commit violations and have a negative impact on clients and society.

- Risk of financial exclusion: The purpose of a corporate legal framework is fair competition, discrimination avoidance and financial inclusion. Lack of a legal framework will lead to unstable and inconsistent development, discrimination between customer segments with different financial backgrounds, knowledge, and location.

- Risk of security and data breach: Fintech companies do not have governance regulations and cannot meet the requirements of security and data protection before providing products and services to market. Personal data collection needs to comply strictly with security requirements to avoid potential risk.

- Risk of AML and combating the financing of terrorism (AML & CFT): Banks and licensed Fintech companies shall comply with AML & CFT bodies of rules. However, new Fintech companies may escape or ignore those requirements due to loose supervision.

- Risk of lack of transparency: Fintech companies are not managed under supervisory bodies. They may publish or provide clear details on their products and service policies including fees, pricing, and the like which may lead to clients' losses. At the same time, lack of transparency will lead to losses for investors in P2P lending and crowdfunding due to lack of investment products and insider trading.

- Risk of illegal loan collection: Due to lack of a legal framework, P2P lending and crowdfunding companies may commit illegal loan collection activities.

Demand to apply Fintech solutions such as e-KYC (know your customer), blockchain, big data, and open banking is quite large. With the development of technology, banks and financial institutions embrace implementing innovative products in the absence of a legal framework.

The current legal framework does not allow nonbank entities to function as settlement agent and or carry out cross-border connection or payments through QR code, card payment or transfers.

Management bodies for Fintech

Stakeholders in financial markets like banks and insurance and securities companies are regulated and managed by the SBV and the Ministry of Finance, respectively. However, there is no authority to define management operations for Fintech companies. With the vision and mission of 4.0 industry defined by the government along with the dramatic development of technology, the government should appoint a body to manage and supervise the Fintech market to ensure the healthy development of Fintech companies in Vietnam.

Infrastructure in Vietnam has not met the requirements of high-tech development yet, especially security technology

Vietnam is a developing country and economic limitations still hinder developing technology to approach global standards. Fintech companies have the advantage of flexibility, a young workforce and technology adoption, but their infrastructure is still a weak point.

In recent years, Vietnam has detected several scams and fraudulent cases related to mobile wallets in which many people lost money. One of the causes is the lack of two-factor-authentication (2FA) technology for cashing in or cashing out transactions. At the same time, not all intermediary payment services are complying with global payment standards like PCI DSS (payment card industry data security standard). Therefore, their systems may have vulnerabilities allowing hackers to steal customer data and information.

Flexibility is either an advantage or a disadvantage for Fintech companies. They can adopt, implement, and quickly launch products and services because they are not burdened by the same procedures and strict quality management processes as traditional financial market players. Lack of control and quality management can be a risk for Fintech companies with the spread of cybersecurity threats worldwide.

Taxation policies attractive to investors in Fintech companies

Vietnam's Fintech market is in a nascent stage compared to Singapore or Indonesia in the ASEAN region. The legal framework for Fintech in Vietnam is under review and has not been finalized yet. Therefore, there are no tax exemption policies for seed investors or venture capitalists when they invest in Vietnamese Fintech companies. Absence of tax advantages discourages the amount of investment funds coming to Vietnam in the Fintech area.

Management experience and strategic vision

According to research by *CB Insights*, the average failure rate of startup companies ranges from 75 to 90%. In Vietnam, there are roughly 1,000 startup projects per year and 92% of them are bankrupt within 3 years from the start date due to lack of management experience and failure to define a strategic roadmap.

Many Fintech companies in Vietnam are startups operated by a young generation that is ambitious and reckless. These entrepreneurs can define their ideas but struggle to identify a strategy for sustainable development as well as to effectively manage the team and business operations. Therefore, most of them will fail and disappear from the market.

Prospects for Vietnam's Fintech Market and Conclusion

In recent years, Vietnam's Fintech companies have not attracted the attention of foreign investors, but they are receiving support from domestic big tech companies such as FPT Corporation, Viettel Group, Vietnam Posts and Telecommunications Group. Big tech companies are investing and supporting the Fintech companies with their technology approaches and quality control and management. With current developments, as forecast by the Joint Stock Bank of Investment and Development (BIDV), Vietnam Fintech market is expected to increase transaction volume to USD12 billion by 2022.

Fintech payments companies are still leading the Fintech market, but the share of other segments will increase when the legal framework is established. Regarding blockchain, NAPAS completed the proof-of-concept for funds transfer by blockchain technology with 3 banks in 2018. The SBV is cooperating with relevant ministries to research CBDC as the trend is spreading among central banks around the world. Moreover, Vietnam has ten blockchain companies with capital of over USD100 million and seven of the top two-hundred blockchain companies globally were founded by Vietnamese. With the establishment of the Vietnam Blockchain Association and its potential, blockchain is ready to take off in the near future. Like blockchain, other Fintech segments including credit, P2P lending, crowdfunding, and

credit scoring are waiting to take off until the rules are set.

Recognizing the importance of Fintech, the SBV established a Fintech steering committee to supervise, build a roadmap for Fintech development, build a legal framework, and coordinate with ministries to implement the instructions of the Prime Minister in Decision number 844/QD-Ttg dated May 18, 2016 regarding "Approval for assistance policies on national innovative startup ecosystem to 2025".

Recently, the SBV is in the process of finalizing the draft decree and the Prime Minister's proposal to allow 7 Fintech segments to pilot a sandbox. The segments include payment, credit, P2P lending, e-KYC, open banking, blockchain, and bank support services (credit scoring, savings, fund mobilization, etc.). The result of the pilot sandbox will be the framework for the local authority to build and issue an official decree regarding Fintech operations. This action by the Vietnamese authorities is a good sign for Fintech companies.

The Vietnam Fintech Club (VFC) was set up in 2017 and is working under the supervision of Vietnam Bank Association. VFC actively supports the operations of Fintech companies in Vietnam and provides consulting in building the Fintech framework to the SBV and other bodies. To support Fintech in Vietnam, VFC joined the Fintech Challenge Vietnam as organizer and partner, in cooperation with Vietnam Innovative Startups Accelerator (VIISA) to establish the first ever Fintech Lab. To exchange expertise on Fintech around the world, VFC has worked with peers and partners from Korea, Latvia, Singapore, Thailand, Taiwan, and the World Bank/International Finance Corporation (IFC). Discussion with these partners is valuable and will provide the material for the supporting authority to build a framework for the Fintech business.

The new normal brought about by the COVID-19 pandemic, opened many opportunities for Vietnam to expand its digitization through Fintech to develop its society as well as to promote financial inclusion. As Nguyen Dang Hung, Chairman of the VFC said, "Fintech is changing the banking and finance sector in Vietnam and making the industry more crowded than ever. Once the framework of Fintech is fully set up, the Fintech market in Vietnam will boom and put its footprint on the Fintech World."

VIETNAM FINTECH CLUB

Vietnam Fintech Club (VFC) was established in 2017 under the supervision of the Vietnam Bank Association to initiate a channel for Fintech companies to support Fintech activities in Vietnam, share experiences and propose to authorities to complete the Fintech legal framework. VFC is playing a vital role in the market and cooperates with numerous organizations to aid all stakeholders with the target to grow Fintech in Vietnam.

Introducing Nomura Foundation

Nomura Foundation (the Foundation) is a public interest incorporated foundation formed in 2010 from the combined resources of three existing foundations established by Nomura Group, a financial services group comprising Nomura Holdings and its subsidiaries in Japan and overseas. The Foundation aims to support a dynamic and sustainable economy and society by promoting the social science disciplines, enhancing international understanding, and fostering young academic and artistic talent. It focuses on four program areas: Social Sciences, Foreign Student Scholarships, Arts and Culture, and the World Economy.

The World Economy program supports research, conferences, and publications related to the macro economy and capital markets.

In the macro economy area, the Foundation has organized conferences together with experts from the Brookings Institution (US), Chatham House (UK), the Development Research Center of the State Council (China), and Bruegel (Belgium) as well as Nomura Securities and Nomura Institute of Capital Markets Research to share research on such topics as monetary and financial institutions, fiscal stability, and demographic change and sustainability.

Panel Discussion at the 2015 Forum

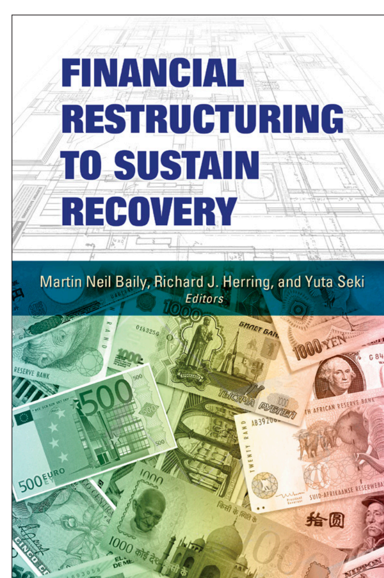
In the area of capital markets, the Foundation has organized conferences and roundtable discussions in conjunction with the Brookings Institution, the Wharton School, the Development Research Center of the State Council (China), China's Center for International Knowledge on Development and Nomura Institute of Capital Markets Research. It has also provided financial backing for several conference volumes published by the Brookings Institution, *Capital Markets in India* published by Sage, Inc., and the quarterly Japanese-language journal *Chinese Capital Markets Research*.

Research papers and presentations prepared for conferences and the content of print publications are available on the Foundation's website http://nomurafoundation.or.jp/en.

With the expanding importance of Asia in the 21st century global economy, the Foundation has been increasing its support of intellectual interactions among experts at think tanks, universities and government agencies in the region. As part of this effort and recognizing the importance of capital market development in promoting economic growth and prosperity in Asian countries, the Foundation started publishing *Nomura Journal of Asian Capital Markets* in 2016.

Cover of *Chinese Capital Markets Research*

Lord Mervyn King at the 2015 Forum



Cover of *Financial Restructuring to Sustain Recovery*

Introducing Nomura Institute of Capital Markets Research

Cover of *Nomura Capital Markets Quarterly*

Cover of *Nomura Sustainability Quarterly*

Nomura Institute of Capital Markets Research (NICMR) was established in April 2004 as a subsidiary of Nomura Holdings to build on a tradition begun in 1965 of studying financial and capital markets as well as financial systems, structure, and trends. NICMR develops original research and policy proposals by specialists based upon knowledge of actual business practice.

NICMR publishes some of its research output in Japanese in *Nomura Capital Markets Quarterly* as well as *Nomura Sustainability Quarterly*, and posts some items in Japanese, English, and Chinese on its website.

NICMR's core mission is to contribute to reform of Japan's financial system and securities market in order to foster establishment of a market-structured financial system. Structural changes, particularly population aging, are having a major impact on Japan's economy and society. Addressing the challenges created by these changes calls for reforming social security, tax, and public finance systems. One of Japan's most valuable resources is the JPY2,000 trillion in financial assets held by households. Establishing a market mechanism-driven money-flow that makes efficient, effective use of these assets is critical to the country's future.

NICMR's research focus extends well beyond Japan to encompass current issues in capital markets around the world. In addition to research offices in New York, London and Beijing, NICMR established a research office in Singapore in 2015 to strengthen its Asian research platform.

The continued growth of Asian economies including China is generating huge funding needs for infrastructure and creating an urgent need for indirect financing systems and robust capital markets in the region. Promoting the development of Asian capital markets is a key for the future of Asian financial systems and economies. Moreover, it is important that Asian perspectives and regional differences are recognized in the post-global financial crisis environment of closer cooperation among financial regulators making rules and global standards.

NICMR's recommendations for developing financial and capital markets in Asia are based on analyses of past experience in developed economies. In particular, Japan offers useful lessons on the importance of direct finance for supporting new businesses and of investment services to cater to the needs of a growing middle class.

NICMR has also been working to strengthen its sustainability initiatives. To this end, it established the Nomura Research Center of Sustainability in December 2019. This research center focuses on objective and practical research into areas of sustainability closely related to the financial and capital markets in major regions including Asia.

As a member of the Nomura Group, a global financial group based in Asia, NICMR strives to contribute to the development of financial and capital markets in Japan and the rest of Asia through fundamental research and experience-based policy recommendations.

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