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Editorial Statement

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The Pacific Economic Cooperation Council (PECC) is a unique tripartite partnership of senior figures from business, government and academia who participate in a private capacity to freely discuss current practical and policy issues affecting the Asia-Pacific region.

Established in 1980, PECC currently comprises 26 members from across the region, each with their own committee. Of these members, one is an associate, while two are institutional members representing the Pacific Trade and Development Conference (PAFTAD) and the Pacific Basin Economic Council (PBEC).

As the sole official non-governmental observer of APEC since the latter organization's founding in 1989, PECC has provided information and analytical support to APEC, and has also channelled and facilitated the private sector's participation in APEC projects and processes.

The Chinese Taipei Pacific Economic Cooperation Committee (CTPECC) was formed in 1984 to participate in PECC events as an observer, and in November 1986, its application for full membership was approved at the 5th PECC General Meeting. CTPECC has been a full and active member of PECC ever since.

The Chairman of CTPECC is Dr Chien-Yi Chang, and the Secretariat of CTPECC is located at the TIER Department of International Affairs. The Secretary General of CTPECC is Dr Charles Chou. Asia-Pacific Perspectives (APP) is a key publication of CTPECC and an open forum welcoming submissions of analyses, perspectives, and commentaries on the Asia-Pacific region. The newsletter focuses on political, economic and social issues. Articles in the journal solely represent the authors' but not the CTPECC's viewpoints.

Editorial COMMITTEE

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Global Economic Review and Outlook

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Looking back at the performance of the global economy in 2021, it is pretty much a year of economic recovery. Given the constraint that the COVID-19, which has had an unprecedented impact on the global economy in 2020, has developed into a more threatening variant virus in 2021. However, with the gradual spread of international vaccines, the European and American markets took the lead in unblocking and resuming normal economic activities, which in turn boosted final demand. Coupled with the lower base period in 2020, most major economies will have outstanding economic performance in 2021.

Looking ahead to the global economic outlook in 2022, compared with 2021, most international forecasting agencies all believe that the momentum of global economic recovery is expected to continue. Only under the influence of base period factors, the global economic growth rate in 2022 is slightly lower than that in 2021. Basically, these institutions estimate that the global economic growth rate in 2021 will be in the range of 5.4-5.9%, and the forecast value of the economic growth rate in 2022 will be in the range of 4.1-4.9%. Nevertheless, there’s still a big uncertainty ahead. A newly COVID variant, so called “Omicron” triggered lockdown measures across economies started in November 2021. It could be the biggest uncertainty hindering the growth potential in 2022.

The international oil prices reflect the trend of the global economy. Take Brent crude oil, which represents the world's crude oil supply and demand, as an example, it will only average about 41.69 US dollars per barrel in 2020. By 2021, the average price per barrel has risen to US$71.59, showing that international demand in 2021 has risen significantly due to the recovery of the economy. However, according to the US Energy Information Administration (EIA) forecast, the Brent crude oil price in 2022 will be expected to stabilize at an average of US$68.28 per barrel, which means that the economy is recovering steadily, and the force of boosting demand will not further push up the price of raw materials. In addition, EIA observations and forecasts are similar to the trend of West Texas crude oil prices, which represent the domestic supply and demand situation in the United States. It means that the economic recovery in the next year will be stable and continuous; it is reflected in the performance of international oil prices.

The performance of major international economies has always been closely related to the global economy. The combined economic scale of the four economies of the United States, the European Union, China, and Japan will account for more than 65% of the world economy in 2021. Through trade and financial linkages, the economic policies of these four major economies can have positive or negative spillover effects on other economies. It has the ability to control the flow of world capital, the layout of exports and investment, and the fluctuation of exchange rates and interest rates. Therefore, the economic performance of these four major economies has absolute influence on the past and future of the global economic boom.

The US Economy

The United States is the world's largest economy, with an economic scale of 22.9 trillion U.S. dollars in 2021, accounting for 24.13% of the world's total GDP of 94.9 trillion U.S. dollars, nearly a quarter. In addition, the United States is also the world's largest importer and final consumer market for goods; therefore, the recovery of the US economy and increased demand will promote the operation of the international value supply chain, and it has become the main key to the growth of world trade in 2021.

The U.S. economy was severely hit by the COVID-19 pandemic in 2020, and the number of confirmed cases was and still is the largest in the world. Due to the successive lockdowns of states in the United States, the unemployment rate once soared to more than double digits. Looking back at 2021, the U.S. economy has generally maintained the recovery trend since the unblocking. The Economist

Intelligence Unit (EIU) estimated in November 2021 that the U.S. economic growth rate for the whole year would be 5.5%; the private consumption growth rate would be 7.8%, and the fixed investment growth rate would stand at 7.7%, meaning that the domestic demand market would be very strong. In terms of external demand, it was estimated that the growth rate of US exports and imports of goods and services in 2021 would be 3.8% and 13.7%, respectively. In addition, fiscal expansion measures in response to the impact of the pandemic have also kept the US fiscal revenue and expenditure as a proportion of GDP, which was estimated to be 12.4%; making the public debt to GDP ratio to 99.7%.

Looking ahead to the US economy in 2022, although the growth of private consumption is expected to reach an annual growth rate of 4.0% relative to a relatively high base period, the main reason is that the job market will perform better. According to EIU's forecast, the average unemployment rate in the United States in 2022 is 4.5%. As for the formation of fixed capital, the performance in 2022 is expected to reach 4.8%. The base period factors and the guidance of fiscal stimulus measures are the main reasons. Although the US real estate market is also a key link in the recovery of the US economy. Because the Fed's continued monetary easing measures have led to a decline in the mortgage interest rate of home loans, which can help the continued performance of the US housing market to a certain extent. The sustained surge in inflation in the United States is the main source of pressure in 2021. However, the Fed has repeatedly stated that inflation is a temporary phenomenon, so it will maintain the federal funds rate at 0-0.25% in 2021. It is expected that in 2022, the Fed may raise interest rates in response to inflation. In terms of exports and imports of goods and services, it is expected that the external demand performance of the United States in 2022 is also expected to maintain a certain level. With the popularization of vaccines and the return of economic activities to normal in 2021, the import and export of the US manufacturing and service industries will rebound, and the trade performance will continue until 2022.

The European Economy

In terms of the European economy, the European Union's economic scale would reach 17.1 trillion US dollars in 2021, accounting for 18.01% of the world's total GDP. Looking back to 2021, the European economy is generally recovering. One is because of the gradual popularity of vaccines in response to the COVID-19, and the vaccination rate in wealthy European countries is significantly higher than that of other continents; and the other is because of the base period. In 2020, all European countries will experience negative economic growth. However, due to the low base period effect and even if the threat of variant viruses still appears, most economic activities in Europe have returned to normal, so all European countries will return to positive economic growth in 2021. Looking forward to 2022, it is generally expected that the COVID-19 is expected to be further contained, so the European economy will continue its recovery in 2021. It is expected that the overall GDP growth rate of the European Union and the Eurozone will be 4.3% in 2022. However, compared with the 2021 economic growth rate that has already been boosted during the base period, it has decreased by 0.3 and 0.5 percentage points respectively.

Regarding the outlook for the performance of domestic demand, it is expected that the private consumption growth rates of the EU and the Eurozone in 2022 will be 5.1% and 5.4%, respectively, which is a significant increase compared to the 2021 figures. Although the impact of variant viruses, Delta, Omicron etc. also appeared in 2021, most of the time European countries did not offer further control measures. In addition, the fixed investment growth rates of the European Union and the Eurozone in 2022 are expected to reach 7.2% and 7.5%, respectively. In terms of external demand performance, EIU expects that in 2022 the export momentum of the EU and the Eurozone is expected to remain strong, with growth rates each reaching 5.4%.

Unemployment rates in the European Union and the Eurozone are expected to be around 7.2% and 7.9% respectively in 2022. In contrast, the recovery of the European job market is much slower than that of the United States. Unemployment in Europe has long since turned from the cyclical nature of the early stage of the epidemic to structural unemployment, and structural unemployment generally takes longer to resolve. This is because manufacturers must increase the number of employees on the premise that the future business outlook is clearer. Even if the natural unemployment rate of certain economies such as Spain is already close to double digits, it is expected that the new unemployment rate in Europe will continue for a period of time, which has also become one of the obstacles to the long-term growth of the European economy. However, in terms of average prices, the average annual growth rate of CPI in Europe in 2022 is expected to be in the range of 1.6-1.4%, which is 0.4 and 0.5 percentage points lower than the price level in 2021, which is consistent with the forecast of European Central Bank (ECB); ECB believes that the European region The inflation phenomenon in China is not like the situation in the United States. Firstly, it is less serious; secondly, it is only a transient phenomenon during the transition period. Since the expected average inflation is still significantly behind the 2.0% target set by the ECB, there is no significant need for the ECB to adjust its loose monetary policy in the near future.

The Chinese Economy

China is the second largest economy in the world after the United States in terms of countries. Its economic scale will reach US$16.9 trillion in 2021, accounting for 17.81% of the world's total GDP. But if measured by the purchasing power parity index, China is already the world's largest economy. As the impact of COVID-19 on China's economy was mainly in the first quarter of 2020, which depressed the base period, China's annual GDP growth rate in the first quarter of 2021 was as high as 18.3%, the highest level since records began in 1992. However, from the second quarter of 2021, the variant virus began to break out sporadically in China. In addition to the expansion of fiscal expenditures in response to the new pandemic, the consumption power caused by the expansion of the epidemic again, power restrictions and government real estate regulation have also occurred. The instability of financial issues such as debt also has a restrictive effect on the economy; most of China's manufacturing purchasing managers' indicator (PMI) in 2021 is near the critical point of 50.

China's economic growth rate in 2021 will reach 7.9%. In terms of the performance of the domestic demand market, the growth rates of private consumption and fixed investment in 2021 will be 7.6% and 5.2%, respectively. China's performance in the external demand market is relatively strong, with the growth rate of exports and imports of goods and services in 2021 reaching 10.7% and 7.0%, respectively. In response to the expansion of fiscal expenditures in response to the epidemic, the balance of fiscal revenue and expenditure in 2021 will account for 4.9% of GDP; its public debt will account for 21.7% of GDP. However, although China’s central debt and fiscal conditions appear to be healthy, the real problem is local debt. In 2021, in China's first-tier, second-tier, and provincial capital cities, 10 cities have debt ratios exceeding 500%. Corporate debt is another serious problem. China’s corporate bond defaults in 2021 hit a record high, highlighting the tightening of credit and the unwillingness of local governments to bail out state-owned enterprises in trouble.

To support economic growth of 5.3% in 2022, it is expected that in terms of domestic demand performance, China's government consumption expenditure growth rate in 2022 will be 6.2%, private consumption growth rate will reach 6.0%, and fixed investment growth rate will be 4.7%. In terms of the performance of the external demand market, China's exports and imports of goods and services are expected to grow at 5.9% and 6.7% in 2022. In addition, in the context of the expected boom and the recovery of domestic demand, the annual growth rate of the consumer price index will reach the annual average of 1.9%.

The Japanese Economy

Japan's economy will reach US$5.1 trillion in 2021, accounting for 5.27% of the world's total GDP. The most recent global economic crisis hit the Japanese economy through trade pipelines, followed by the 311 earthquake in 2011, the plunge of oil prices from 2014 to 2015, and the 2018-2019 US-China trade war, which further affected the recovery of the Japanese economy. kinetic energy. Under the highest principle of looking forward to breaking away from deflation and boosting economic growth, former Japanese Prime Minister Shinzo Abe once offered “Abenomics measures”. The targeted policy directions include raising the inflation target to 2% and substantially increasing the public expenditure of the Japanese government. And effectively enhance Japan's foreign trade strength. Through the implementation and realization of relevant policy goals, relevant measures deliberately depreciated the yen in order to restore the export price competitiveness of Japanese products, thereby achieving the level of increasing the annual economic growth rate to 3%. Shinzo Abe unexpectedly stepped down in September 2020, and relevant measures have not continued. The successor Prime Minister Yoshihide Suga completed the Tokyo Olympics in 2021, but it was completed under the impact of the epidemic and economic depression. The new Prime Minister Fumio Kishida took over on October 4, 2021, and launched a "New Capitalism" plan to redistribute domestic wealth. The effectiveness of the policy remains to be seen.

Although successive Japanese prime ministers have continued to package economic policies, they are essentially nothing more than loose monetary policies and expansionary fiscal policies. However, the results have been limited in the past. One of the reasons is that the yen is an international safe-haven asset that is often affected by geopolitical influences and rises. For example, the trade war in 2019 and the impact of the epidemic in 2020. Whenever the global economy declines and risks increase, the yen's hedging component becomes less It will be further highlighted, offsetting the Bank of Japan's easing measures. In addition, Japan has the world's most serious public debt problem. Its share of GDP has reached 240.6% in 2021 and is expected to further expand to 241.4% in 2022. Such a heavy debt burden has significantly restricted the space for fiscal policy.

The impact of the 2020 epidemic on the Japanese economy exceeds the impact of the 2009 global financial tsunami; however, under the influence of the low base period, it did not significantly lift the Japanese economic growth rate in 2021, only reaching 2.3%, mainly due to the unfavorable control of the pandemic. In terms of domestic demand performance, Japan's private consumption growth rate and fixed investment growth rate in 2021 are estimated to be 2.1% and 1.1%, respectively. In terms of external demand performance, the recovery of demand from Europe and the United States has boosted Japan's exports and imports of goods and labor services in 2021. The growth rates of exports and imports were 11.4% and 8.8%, respectively. In order to cope with the impact of the epidemic, the Bank of

Japan (BOJ) has decided on an ultra-loose monetary policy since 2020 and will maintain relevant monetary policy measures in 2021. Japan's benchmark interest rate remains unchanged at -0.1%, and the anchor target of the 0% 10-year bond yield curve remains unchanged, in conjunction with the adoption of unlimited quantitative easing measures. The investment of fiscal stimulus will also make Japan's fiscal revenue and expenditure accounted for 8.8% of GDP in 2021.

The EIU expects that Japan’s economy is expected to recover further under the control of the epidemic in 2022, and the economic growth rate is expected to reach 3.2%. After the impact of the mutant virus, private consumption is expected to recover again in 2022, and the related growth rate is expected to be about 2.8%. The Japanese government implements an expansionary fiscal policy, in line with its ultra-low interest rate financial environment, it is expected that the growth of fixed investment in 2022 will increase by 2.2%. In terms of external demand performance, EIU further estimates that Japan’s exports and imports of goods and services will grow at 3.9% and 4.1% in 2022.

Concluding Points

It is expected that the momentum of recovery and growth of the major economies will continue in 2022. That means the drivers driving the global value chains will be solid; good news for export-oriented economy such as Taiwan. However, we still need to be very cautious towards the new COVID variant. From the previous experience in Taiwan in May 2021, the impacts on the demand side could be managed to some certain extent. However, the impacts on the supply side would be wholly devastating by referring to the case in Vietnam in 2021.

The Future of Cryptocurrency From a Regulatory Perspective

Larry Ho
CAMS | KryptoGO BD

It is no doubt that 2021 has been a big year for cryptocurrency, as there has been a number of developing trends for this space.

With major companies buying in, Covid 19 accelerating the shift toward digital payments, Bitcoin adopted by governments, many factors have fueled the growth of cryptocurrency, generating unprecedented interest in this sector.

Before delving into how regulations may apply to cryptocurrencies and its implications, it would be helpful to establish a basic understanding of how both cryptocurrencies and blockchain technology work.

Cryptocurrency is generally defined as a peer-to-peer digital currency that is secured by cryptography. Most cryptocurrencies utilize blockchain, a distributed database that is shared across a network of computers (nodes), as its underlying technology. In most cases, the network of computers are not controlled by a centralized entity (such as the government or central bank), making cryptocurrencies theoretically immune to manipulation.

The first and the most well-known cryptocurrency is Bitcoin, introduced in a white paper published by Satoshi Nakamoto in 2008. The total supply of Bitcoin is capped at 21 million, preventing both inflation and manipulation. This has attracted investors to utilize cryptocurrencies such as Bitcoin as a hedge against inflation or even as a speculative asset.

Cryptocurrencies other than Bitcoin are called Altcoins. Although some may share traits with Bitcoin, many have different purposes and functionalities. For example, Ethereum pioneered the idea to store programs on the blockchain, aka Smart Contracts, and Solana uses a different consensus mechanism to improve scalability.

Prices of Bitcoin and Altcoins have skyrocketed in 2021, drawing in a huge range of ambitious investors that are eager to include cryptocurrencies in their investment portfolios. For investors and crypto-related businesses, the opportunities of cryptocurrencies also come with operational and regulatory challenges, which include how taxation may be imposed on cryptocurrency capital gains, and the implementation of Anti-Money Laundering/Combating the Financing of Terrorism (AML/CFT) policies.

Taxation

While governments, regulators, and central bankers across the world all have varying views on how to classify cryptocurrency, they all seem to agree that it should be taxed based on its use case. Now, one looming question remains: How are taxes on these transactions paid?

In the United States, the IRS has defined cryptocurrency as property, and investors must pay tax on capital gain. The Biden administration has outlined a proposed legislation that would bring more regulation to the cryptocurrency market. The new law will require cryptocurrency exchanges to officially report cryptocurrency gains to the IRS on a 1099-B form and also notify the customer. The customer will then use this information from the form to calculate their own gains and losses and report them on their own tax returns.

However, as the 1099-B forms only take into consideration assets that are in the custody of cryptocurrency exchanges - not crypto assets in the user's non-custodial (private) wallet. If a crypto investor has a private wallet, the government will only see what is done through the crypto exchange and not what was done with the private wallet. As a result, the broker exchange will not know an investor’s cost basis.

Anti-money laundering (AML)

There are certain Money Laundering and Terrorist Financing (MLTF) risks associated with cryptocurrencies, including their anonymity, lack of a regulated intermediary, and the ability to settle cross-border payments instantly. The uniqueness of cryptocurrencies poses a challenge to regulators around the world.

The policy responses vary considerably globally, with some countries, such as Singapore, embracing this new technology and creating an environment to nurture the growth of cryptocurrency and blockchain ecosystem, while other countries, such as China and India, tighten rules on cryptocurrency.

Many people look to the Financial Action Task Force (FATF), an intergovernmental body that sets international standards with an aim to prevent global MLTF, for guidance on these matters. The FATF conducted research into the characteristics of cryptocurrencies and has made several assessments of the MLTF risk associated with them. In summary, FATF view that Virtual Asset Service Providers (VASPs) should be subject to AML/CFT obligations, arriving at the same conclusion as many jurisdictions that have implemented similar rules. An important step in growing the cryptocurrency space is to appropriately assess the risks associated with it, this includes having a clear understanding of the basic concepts of cryptocurrency and how they are controlled and used. On October 28, 2021, the FATF released an update to its 2019 publication "FATF Guidance for a Risk-Based Approach for Virtual Assets and Virtual Asset Service Providers", which called for VASPs to meet AML/CFT standards applied to the traditional finance sector. The updated guidance establishes a conceptual framework of key definitions, which could form the basis for further policy development. This guidance provides similar perspectives to the March proposal, with the key theme focusing on the following topics:

- Clarification on definitions of virtual assets (Defi protocols, NFTs, stablecoins)
- Regulation for P2P transactions
- Licensing and registration of VASPs
- Travel rule implementations

Clarification on definitions of Virtual Assets (VAs) and Virtual Asset Service Providers (VASPs)

FATF uses the terms virtual assets (VAs) and virtual asset service providers (VASPs) to define which assets and businesses should be covered in the guidelines they publish.

VA

A virtual asset (VA) is defined by the FATF as “a digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes.” As the guideline suggests "VAs cannot be merely digital representations of fiat currencies, securities and other financial assets that are already covered elsewhere in the FATF recommendations, without an inherent ability themselves to be digitally traded or transferred and the possibility to be used for payment or investment purposes." A mere declarative record of ownership in a financial asset already covered by the FATF standard is not a VA, such as a bank record maintained in digital format that just represents ownership of fiat currency.

VASP

The FATF defines a VASP as any person or business who conducts one or more of the following “virtual asset activities” on behalf of other people or services:

- Exchange between virtual assets and fiat currencies;
- Exchange between one or more forms of virtual assets;
- Transfer of virtual assets;
- Safekeeping and/or administration of virtual assets or instruments enabling control over virtual assets; and
- Participation in and provision of financial services related to an issuer’s offer and/or sale of a virtual asset.

CBDC

Issued and regulated by the country's central bank, Central bank digital currency (CBDC) is the electronic record of a country's fiat currency. Therefore, CBDCs are not categorized as VAs but rather as fiat currency by the FATF.

NFTs

Non-fungible tokens (NFTs) are unique tokens that usually represent digital works of art or virtual collectibles. Unlike fungible tokens like Bitcoin, NFTs cannot be traded with each other, as each NFT holds a unique identifying code that is used to distinguish them from one another.

FATF encourages jurisdictions to evaluate NFTs on a case-by-case basis and treat them as VAs when their use case fits the VA definition. Generally, FATF does not consider NFT to be a VA considering VA's definition. However, NFTs may fall under the VA category if they are used for payment or investment purposes. FATF's approach to NFTs reflects its approach to other forms of digital assets in that the emphasis is on how NFTs are used functionally, rather than the underlying technology or new nomenclature. A challenge for platforms and merchants dealing with NFT will be identifying which NFTs meet the FATF functional definition of a VA, for instance, through reliable reference data incorporated into the NFT.

Stablecoins

The term stablecoin refers to a class of cryptocurrencies that are designed to offer price stability by pegging its value to a "stable" reserve asset such as the USD. Used as a medium of exchange, stablecoin's have gained much traction in the crypto world as they are less susceptible to price fluctuations, providing stability to a crypto investor's portfolio.

Since there are no regulations that hold stablecoin issuers accountable to ensure the value of the issued coins, the FATF view stablecoins as more of a marketing term rather than a legal or technical category. Although the FATF has already classified stablecoins as VAs, the latest guidance adds that the governing body of a stablecoin issuer should also be regulated as a VASP. Specifically, the governing body is defined as anyone who "establishes or participates in the establishment of the rules governing the stablecoin arrangement". This includes anyone who determines the stablecoin's function, sets the price stabilization mechanisms, manages the integration of the stablecoin into telecommunications platforms, or promotes adherence to common rules across the stablecoin arrangement. FATF emphasizes that jurisdictions must supervise stablecoin projects before they launch and ensure that these projects have AML/CFT mitigation measures in place in the planning stage.

DeFi protocols

Decentralized finance (DeFi) is a blockchain-based financial system where users do not need to rely on traditional intermediaries such as brokerages, exchanges, or banks to access financial services. Instead, smart contracts (programs stored on the blockchain) are used to facilitate transactions, allowing people to lend or borrow funds, trade derivatives, and swap cryptocurrencies in a peer-to-peer manner.

It has been long debated whether non-custodial platforms such as DeFi protocols should be regulated as VASP since these protocols don't actually hold the users' funds. The FATF states in the latest guidance that although the VASP standards does apply to software or technology, anyone who maintains control or sufficient influence in the DeFi arrangements may fall under the definition of VASP and therefore must be responsible for meeting AML/CFT obligations.

Travel Rule

Also known as the FATF Recommendation 16, the Travel Rule requires countries to collect identifying information from the originators and beneficiaries of money transfers in order to stop money laundering by minimizing the anonymity of large transactions. The FATF has expanded the Travel Rule to apply to VASPs, subjecting them to the same requirements as traditional financial institutions during domestic or international transfers of funds. However, if a VASP believes that the counterparty will fail to protect sensitive information, they can withhold sending the customers information, provided that the AML/CFT risks are acceptable.

In the latest guidance, FATF goes further to recommend that the Travel Rule should also apply to transactions between VASPs and non-custodial wallets (private wallets). This will pose as a huge challenge for VASPs as it would be very difficult to identify non-custodial wallet owners.

KYC on private wallets

The introduction of a private wallet that retains KYC information or even a form of decentralized identity may be the solution to some of the regulatory and tax problems mentioned above. Currently, the anonymity of cryptocurrency and inconsistent global standards have created significant data gaps for regulators. Although authorities may be able to trace transactions executed on the blockchain due to blockchains' ability to record a permanent, immutable history of transactions, they may not be able to link the real-world identity behind each transaction.

Despite pushback from FinCENS's proposed regulation on self-hosted wallets, a decentralized identity could potentially deliver benefits to users such as eliminating the need for multiple KYC's when registering for different services, faster logins, and an overall smoother user experience. This could bring more adoption for the crypto space as the regulation infrastructure would move closer in line with the traditional financial system, giving reassurance to investors who are waiting on the sideline.

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Innovation, Inspiration, and Inclusion: A Succinct Account of the Singapore FinTech Landscape

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Every once in a while, there momentarily erupts one idea/product that revolutionises the way we perceive, ruminate and live. However, some ideas/products refuse to stay dormant and cower under others. They ferociously thrive and transform the future of mankind. Such is FinTech, which is a portmanteau of the terms “finance” and “technology” and refers to businesses that use technology to enhance or automate financial services and processes.

Characterised by the symbiosis between banks, technology and the receptive and the hungry consumer mind, FinTech has a seemingly endless array of applications. Be it investment apps or cryptocurrency or insurance, FinTech is a growing force in the world, especially in a technocratic state like Singapore. The statistics, like 1000+ firms with 19% growth year-on-year, continue to astound. In 2020 alone, Singapore attracted over S$1.4 billion in FinTech investments, making it one of the largest invested markets in Asia. Singapore constantly seeks to foster closer cooperation with international partners to promote innovation. The Monetary Authority of Singapore (MAS), Singapore’s central bank, has signed 35 FinTech Cooperation Agreements with international governments and organisations at the time of writing.

Innovation, Inspiration, and Inclusion have been the driving forces of FinTech development, empowered by the government’s endorsements and initiatives. Next, we revisit a key Singapore’s initiative of being a smart nation and nine leading features of Singapore innovation landscape recognized by MAS:

1.Smart Nation

This initiative by the government harnesses technology to the fullest with the aim of improving the lives of citizens, creating more opportunities, and building stronger communities. This has led to the increased digitisation of services around Singapore, a large internet penetration rate of 75%, and an impressive digital literacy. This roll-out sets up consumers of both millennials and elderly in Singapore to access financial technologies. It also enables FinTech players to reach consumers through digital mediums.

2.Regulatory Sandbox

The FinTech Regulatory Sandbox framework enables financial institutions (FIs) to experiment with innovative financial products in a live environment but within a well-defined space and duration. By relaxing specific regulatory requirements, it gives liberty to FinTech players.

3.Green FinTech

MAS has launched Project Greenprint, a technology platform aimed at promoting a sustainable financial ecosystem. Initiatives, such as those enable trusted and high-quality environmental, social, and governance (ESG) data, would allow FIs to mobilise capital through incorporating ESG factors in pricing and labelling of green financial products and facilitating financing and investment decisions.

4.Business sans Borders (BSB)

BSB is a collaborative artificial intelligence (AI)-driven global solutions hub to foster small and medium-sized enterprises (SME) and micro, small and medium enterprises (MSME) digitalisation. This initiative allows for enhanced domestic and international trade opportunities for SMEs, interoperability within SME ecosystems, and quick access in the provision of digital services with seamless integration.

5.Central Bank Digital Currency (CBDC)

The provision of a retail CBDC unlocks new possibilities for the future of money and payments and has a positive impact on financial stability and monetary policy.

6.API Exchange

Set up by the ASEAN Financial Innovation Network (AFIN), the API Exchange in Singapore is the world's first open architecture platform for FIs to easily discover FinTech firms, design prototypes, and employ solutions.

7.SGFinDex

The SG FinDex is the first in the world to use a national digital identity and centrally managed consent system for secure access to financial data.

8.E-payments

MAS has rolled out many initiatives to innovate and improve electronic payments, such as SGQR, FAST, PayNow, and UPOS terminals.

9.Governmental grants

The MAS digital acceleration grant (DAG) scheme supports Singapore-based smaller FIs and FinTech firms to adopt digital solutions to strengthen operational resilience and serve its customers better. The provision of the productivity solutions grant (PSG) offers up to 80% funding for local start-ups.

10.Singapore FinTech festival

Singapore FinTech Festival (SFF) is the largest FinTech festival in the world, with notable speakers such as Bill Gates and Narendra Modi. The SFF also announced the SFF Global FinTech Awards that represent the industry's highest accolade for FinTech innovation, as well as 12 award categories and winners of the awards, to recognise the impactful FinTech initiatives.

With the governmental initiatives above in Singapore, we can observe a rising number of FinTech and financial inclusion initiatives from the industry. Here, we exemplify five of them:

1.Project Ubin

A collaborative effort with MAS and the industry that explores the use of blockchain and distributed ledger technologies in the areas of clearing and settlement of payments and securities. This project enhances our understanding of the technology and the potential benefits it may bring through practical experimentation.

2.ASEAN Financial Innovation Network (AFIN)

The unbanked population in ASEAN stands at 290 million, with only 18% of the region having access to credit, financial services, or investment products. AFIN strives to drive financial innovation and inclusion in the ASEAN region and beyond by providing an integrated platform for collaboration between banks, FinTech companies, microfinance institutions, non-banking FIs and supporting an array of financial service functions and solutions such as customer onboarding, credit scoring and merchant solutions.

3.MAS X Mojaloop Foundation

This collaboration provides the underprivileged access to affordable financial services through digital currency-based settlement systems and foundational digital infrastructure. Mojaloop's open-source software also serves as a blueprint for organisations to build interoperable digital payment systems.

4.Proxtera

A private entity to promote cross-border trade and financial services connectivity, provides access to an international network of wholesale marketplaces, SME ecosystems and digital services.

5.GrabPay

GrabPay strives to increase digital financial inclusion by allowing customers without physical bank accounts to make purchases, with unbanked borrowers able to utilize alternative data such as e-commerce transactions to prove credit worthiness.

To support all the initiatives above, FinTech talents are crucial for the sustainable development of the finance industry. Nurturing FinTech talents had been an urgent global task. Launched in October 2018 with its first cohort of students admitted in July 2019 while graduated in June 2020, Master of Science (M.Sc.) in FinTech programme at Nanyang Technological University, Singapore (NTU Singapore) has cultivated many FinTech talents and helped the working adults to change their careers into FinTech. With the strong demands of nurturing FinTech talents, there are also alternative FinTech-related programmes in Singapore, such as in Singapore Management University and National University of Singapore that just launched in 2021. However, the distinct features of M.Sc. in FinTech at NTU Singapore include

- its flexible and timely curriculum with two tech-heavy and tech-lite specialisations that allows prospective students with different backgrounds to acquire and appreciate the financial technologies; and
- its practicum module assists students to land a job in the changing landscape of the finance industry.

Besides of the degree programmes, Singapore has also put efforts into the popularization of FinTech, such as teaching the elderly to use the latest technologies, usually organized and implemented by the polytechnic and undergraduate students. It echoes the quote by Ravi Menon, managing director of MAS in SFF 2018:

"Everything we do in FinTech must always have a larger purpose – to improve the lives of individuals, to build a more dynamic economy, to promote a more inclusive society."

As a finishing touch, we summarize some key takeaways of the recent SFF 2021 such that we can anticipate the future of the Singapore FinTech landscape and how it may be linked to that of other countries and regions in Asia:

1. Singapore and the Philippines signed an enhanced FinTech cooperation Agreement to facilitate interoperable payments and link both countries' payment systems for cross border payments.
2. Singapore Financial Data Exchange (SGFinDex), a public digital infrastructure, entered its second phase, enabling users to view their investments on just one platform.

3. Four digital plans are being piloted under Project Greenprint, an initiative by MAS focusing on delivering quality data on sustainability.
4. Mastercard's Crypto Card Program coming to Asia, which aims to support participating FinTech companies by reducing barriers to entry as well as allow the payment network to be involved in the emerging cryptocurrency and digital asset space.
5. Singapore launched two national AI programs targeting the finance and government sectors: NovA! and the National AI Programme in Government. With a myriad of governmental initiatives, a bubbling quantity of motivated and innovative start-ups, and a dynamic and receptive consumer base, it is safe to say that FinTech is going to erupt for a long, long time in Singapore.

Author Biographies

Neha Mehta: A lawyer, Neha enables women FinTech entrepreneurs to access and expand their market-reach on a pro-bono basis. She works closely with the regulators and civil bodies to push the implementation of technology at the last mile. She believes this allows women entrepreneurs to launch their business, upskill themselves and have better access to digital tools to augment their income. Having worked in the finance industry, she observed that there were not many female FinTech founders who face challenges it comes to fund raising. Hence her attempts to support women with FemTech Partners. Neha was featured in Singapore Women in tech 100, FinTech 50, 2020 and 2019.

Chi Seng Pun: Dr. Chi Seng Pun (Patrick) is currently an Assistant Professor and the Programme Director of Master of Science in Financial Technology (MSc in FinTech) at School of Physical and Mathematics Sciences, Nanyang Technological University, Singapore. In 2018, Patrick founded the MSc in FinTech programme to cultivate the FinTech talents. The programme has been well-received in Asia. Prior to NTU, Patrick obtained his Ph.D. in Statistics at the Chinese University of Hong Kong (CUHK) in 2016. His research won numerous awards, including 2016 Nicola Bruti Liberati Prize and 2015 Best Student Research Paper (First Place) in INFORMS Financial Section. Patrick has strong research interests in Financial / Actuarial Mathematics, Big Data Analytics, and AI applications in Finance, as evidenced by his numerous top-tier publications in these fields.

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