



**Asia-Pacific  
Economic Cooperation**

**Strategies and Initiatives  
on Digital Financial Inclusion:  
Lessons from Experiences  
of APEC Economies**

**Finance Ministers' Process  
December 2022**





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# **Strategies and Initiatives on Digital Financial Inclusion: Lessons from Experiences of APEC Economies**

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December 2022**

APEC Project: FMP 01 2021

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## Contents

Abbreviations and Acronyms .....	iv
Acknowledgement .....	v
Introduction.....	vi
Executive Summary .....	1
1. Significant gains but pain points remain .....	4
2. Creating an enabling environment.....	11
3. Onboarding the unbanked and underbanked .....	23
4. Shepherding global efforts.....	30
5. Advancing inclusion through collaboration and synergy.....	39
Annex 1: APEC Webinar Program.....	43
References .....	45

# Abbreviations and Acronyms

ADB	Asian Development Bank
AFI	Alliance for Financial Inclusion
AI	artificial intelligence
APEC	Asia-Pacific Economic Cooperation
API	Application Programming Interface
APIX	API (Application Programming Interface) Exchange
ASEAN	Association of Southeast Asian Nations
BDA	Basic Deposit Account
BI	Bank Indonesia
BI-FAST	Bank Indonesia's fast payment system
BNM	Bank Negara Malaysia
BNPL	Buy Now Pay Later
BSP	Bangko Sentral ng Pilipinas
BTCA	Better Than Cash Alliance
CBDC	central bank digital currency
CGAP	Consultative Group to Assist the Poor
COVID	Coronavirus disease
DLT	distributed ledger technology
DPTR	Digital Payments Transformation Roadmap
e-KYC	Electronic Know-Your-Customer
FEN	Financial Education Network
Fintech	Financial technology
FSC	Financial Supervisory Committee
FSP	financial service provider
GDP	gross domestic product
GPFI	Global Partnership for Financial Inclusion
G20	Group of Twenty
ID	Identification
IFC	International Finance Corporation
KYC	Know Your Customer/Know Your Client
MAS	Monetary Authority of Singapore
ML	machine learning
MSME	Micro-, small and medium-sized enterprise
NBC	National Bank of Cambodia
NRPS	National Retail Payment System
OECD	Organisation for Economic Co-operation and Development
P2P	person-to-person, peer-to-peer
P2M	person-to-merchant
PBoC	People's Bank of China
PhilSys	Philippine Identification System
PSA	Philippine Statistics Authority
PSPs	payment service providers
QR code	Quick Response code
QRIS	Quick Response Code Indonesian Standard
QR Ph	National Quick Response code standard for the Philippines
RBI	Reserve Bank of India
SME	Small and medium-sized enterprise
UN	United Nations
UNSGSA	United Nations Secretary-General's Special Advocate for Inclusive Finance for Development
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNCTAD	United Nations Conference on Trade and Development
WWB	Women's World Banking

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Fintech Development and Innovation Center Financial Supervisory Commission Chinese Taipei	Strands
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Financial Inclusion Department Bank Negara Malaysia	Center for Financial Inclusion at Accion
Digital Currency Institute People's Bank of China	Office of the United Nations Secretary- General's Special Advocate for Inclusive Finance for Development
Payment System Department National Bank of Cambodia	Alliance for Financial Inclusion
Department of Payment and Settlement Systems Reserve Bank of India	Asian Development Bank Institute
Fintech and Innovation Group Monetary Authority of Singapore	Better Than Cash Alliance
SME Development and Financial Inclusion Group, Bank Indonesia	Women's World Banking
Self-Employed Women's Association (SEWA), India	Consultative Group to Assist the Poor (CGAP) The World Bank Group
Ant Group	OECD FinCoNet
Banco Platform, RABC Group	SME Finance Forum International Finance Corporation
CredoLab	Financial Institutions Group Asia Pacific International Finance Corporation
GoTyme	Bank for International Settlements Innovation Hub

# Introduction

The COVID-19 pandemic has further accelerated digital financial inclusion with increased digital financial services. Several studies found evidence that the availability of digital financial services is associated with higher GDP growth and lower income inequality. To sustain the momentum, regulators must keep up with the rapid changes in the fintech landscape. The task is to find the right balance between enabling financial innovation and addressing risks such as insufficient consumer protection, low levels of financial and digital literacy, unequal access to digital infrastructure, money laundering and cyber risks.

The report is part of the APEC project *FMP 01 2021 – Capacity Building on Digital Financial Inclusion*. The objective of the project is to build the capacity of participating APEC member economies to achieve greater financial inclusion by presenting them with information on digital financial inclusion strategies that work, potential risks that may curtail consumer and overall economic welfare, and policy measures to minimize impacts of such risks. This was done through a three-day webinar “*Strategies and Initiatives on Digital Financial Inclusion: Lessons from Experiences of APEC Economies*” held on 25-27 July 2022 and hosted by the Bangko Sentral ng Pilipinas. Subject matter experts from various institutions - monetary and financial authorities, international institutions, fintech companies, and consumer groups – participated in the webinar. Annex 1 presents the program of the webinar. This report presents the discussions from the webinar.

It is hoped that the report would reach a broad audience and attain a multiplier effect with the distribution of the paper on strategies on digital financial inclusion.

The project is aligned with the APEC Roadmap on Digital Financial Inclusion which aims to advance digital financial inclusion in the Asia-Pacific region with the exchange of experiences and capacity building initiatives to foster a cross-border provision of digital financial services.

## Executive Summary

### *Onto the digital platform*

**Overview.** Most economies around the world have adopted digital payment solutions. This has led to the broad usage and patronage of digital financial services. In particular, the use of mobile phones is a game-changer that has enabled the inclusion of unbanked and underserved segments of the population (especially low-income households) within the ambit of financial services. Digital financial inclusion reduces cost and risks, such as loss, theft and other finance-based crimes that come with cash-based transactions. Moving from access to usage of accounts is the next step for economies where a critical mass of the population has accounts (China, Kenya, India and Thailand, among others). These economies relied on reforms, private sector innovation, and a push to open low-cost accounts, including mobile and digitally-enabled payments.

The COVID-19 crisis may have reshaped the digital payment landscape in the long term. The pandemic-induced restrictions have spurred the rise of digital financial inclusion in the Philippines and other emerging markets. Mobility restrictions to prevent virus spread have prompted people to shift transactions towards digital channels from cash and in-person contacts. Some governments likewise used digital finance to provide financial assistance to their citizens. As the use of digital finance continues to grow, however, there is a risk of further driving income and wealth inequalities. In addition, the most vulnerable groups of society might suffer more during an economic crisis due to their lack of proper identification to open financial accounts and electronic devices essential to perform digital transactions. Therefore, authorities from both the public and private sectors ensure that this shift also benefits the marginalized.

Rapid developments in the financial landscape, evolving consumer needs, and the impact of the COVID-19 pandemic present opportunities for digital inclusion. Digitalizing financial services is an excellent opportunity to improve financial inclusion as it could expand financial access for traditionally unserved and underserved consumers. Moreover, careful implementation of digitalization could benefit greater segments of society, including the most vulnerable groups, particularly women and youth. However, the digitalization of financial services is not without challenges and risks.

**Roles.** Fintech enterprises have a major role in the growth, adoption and use of digital financial services. Indeed, with their innovative technology, fintech firms could easily promote and accelerate the usage of digital financial services and drive digital financial inclusion through new business models and products. They can also increase the use of technological developments such as biometrics, digital identity, artificial intelligence and machine learning. Although favorable, there may be risks to this fast-paced development, particularly for consumers. Moreover, digital transactions are evolving to include savings, lending and insurance, in addition to payments. The significant amount of data that is accumulated may also be used efficiently or misused, prompting calls for regulations on data privacy and security.

Therefore, financial authorities have an important role in leveraging these technological developments to further financial inclusion. As regulators, they would need to build their

technological capacity to keep pace with innovation. Regulations could also provide a collective approach to addressing risks without stifling innovation. Greater collaboration with the fintech industry would also promote interoperability across different systems.

Digital financial inclusion will likewise address the growing significance of globalization in the trade of goods and services. In the global marketplace, buyers and sellers (particularly micro-, small and medium-sized enterprises or MSMEs) should be able to find each other regardless of borders and transact with one another at low cost. Migrant workers should be able to send remittances to their families quickly, efficiently, and cost-effectively. These are just a few instances where the interoperability of digital financial services provides opportunities to further invigorate global trade. The need for a common digital finance ecosystem will drive discussions among APEC-member economies to foster collaboration and bridge the digital divide.

Financial inclusion benefits economies with increased economic growth and reduced income inequality. Yet greater financial inclusion is not driven by technological innovation automatically. It would require purposeful collaboration between the public and private sectors to manage consumer and financial risks while promoting technological innovation. International bodies may contribute to this undertaking by promoting standard setting.

***Getting to the last mile.*** Notwithstanding the gains mentioned earlier, about a quarter of adults are still unbanked in 2021 based on the 2021 Global Findex Database (Demirgüç-Kunt *et al.* 2022). Moreover, some consumers do not use digital financial services in certain economies due to a lack of awareness and trust in online transactions, unclear or inadequate information and lack of connectivity or weak signal. On the other hand, some consumers already have internet access but remain hesitant to use digital financial services due to cybersecurity and safety issues, such as hacking, personal security breaches, scams, and unsafe access.

Moreover, the English language in most digital financial apps excludes people who are unlikely to understand foreign languages, particularly low-income groups, women and youth. These groups' low levels of digital literacy and financial skills also make them more likely to be exposed to consumer risks. As consumer challenges and risks to digital financial services increase, there is a pressing need to address and mitigate them as they may lead to over-indebtedness of the vulnerable sectors of the population through improper use of financial services or even further digital financial exclusion.

Broadly, fintech innovations have lowered costs, addressed information asymmetries, increased speed and widened the accessibility of tailored financial services to people. To sustain the momentum of accelerating digital financial services, regulators must keep up with the rapidly evolving fintech landscape and adopt a forward-looking approach. The challenge is to find the right balance: enabling financial innovations with market competition while addressing risks such as insufficient consumer and data protection, low levels of financial and digital literacy, unequal access to digital infrastructure, money laundering and other cybersecurity risks.

Chapter 1 shows the progress and trends in digital financial inclusion in APEC economies and the challenges and risks to address moving forward. Chapter 2 presents the initiatives and measures adopted by public authorities to promote digital financial inclusion. Chapter 3 discusses the business models, products and services, and the perspective of fintech firms.

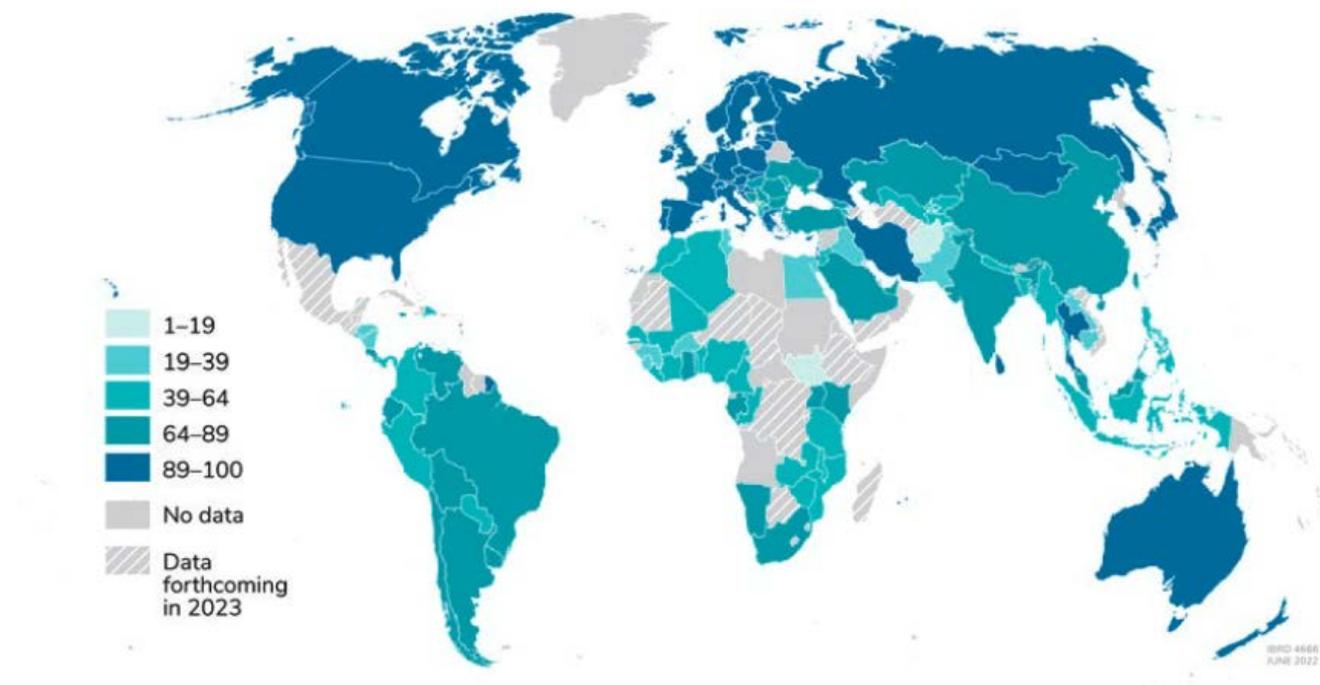
Chapter 4 highlights the important role of international institutions in digital financial inclusion. Finally, Chapter 5 summarizes the issues and provides recommendations.

# 1. Significant gains but pain points remain

*Notable progress.* The COVID-19 pandemic has been a fortuitous boost to digital financial inclusion. Albeit calamitous with devastating impact, it has, nonetheless, spurred the adoption of digital payment systems by businesses and the consumers' patronage of digital financial services. Moreover, the initial restrictions in movements and the practice of social distancing have shifted transactions from cash to online and digital forms. The 2021 Global Findex Database<sup>1</sup> (Demirgüç-Kunt *et al.* 2022) acknowledged the catalyzing role of the pandemic in the growth of the use of digital payments.

Globally, account ownership has increased (Figure 1) from 51% in 2011 to 69% in 2017 and further to 76% in 2021 (Figure 2) marking a 50% increase over the past decade. In addition, there is a steeper increase in developing economies compared to high-income economies, with account ownership in developing economies increasing from 42% in 2011 to 71% in 2021.

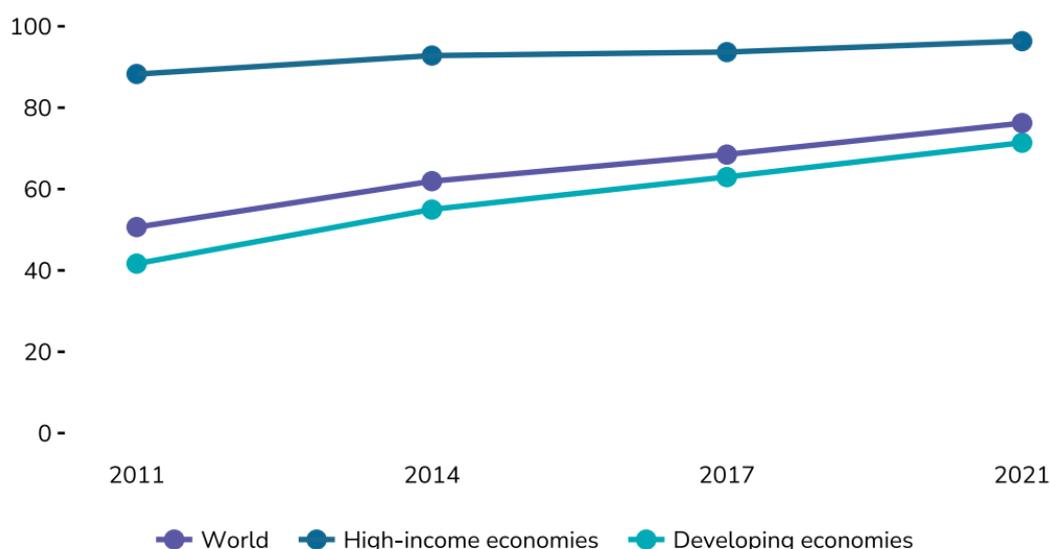
**Figure 1. Global account ownership, percentages, 2021**



Source: Global Findex Database 2021.

<sup>1</sup> Based on representative surveys conducted every three years, the Global Findex Database has been the definitive source of data on the use of financial products and services (payments, savings and borrowing). The 2021 edition is based on a survey of about 128,000 adults in 123 economies during the COVID-19 pandemic.

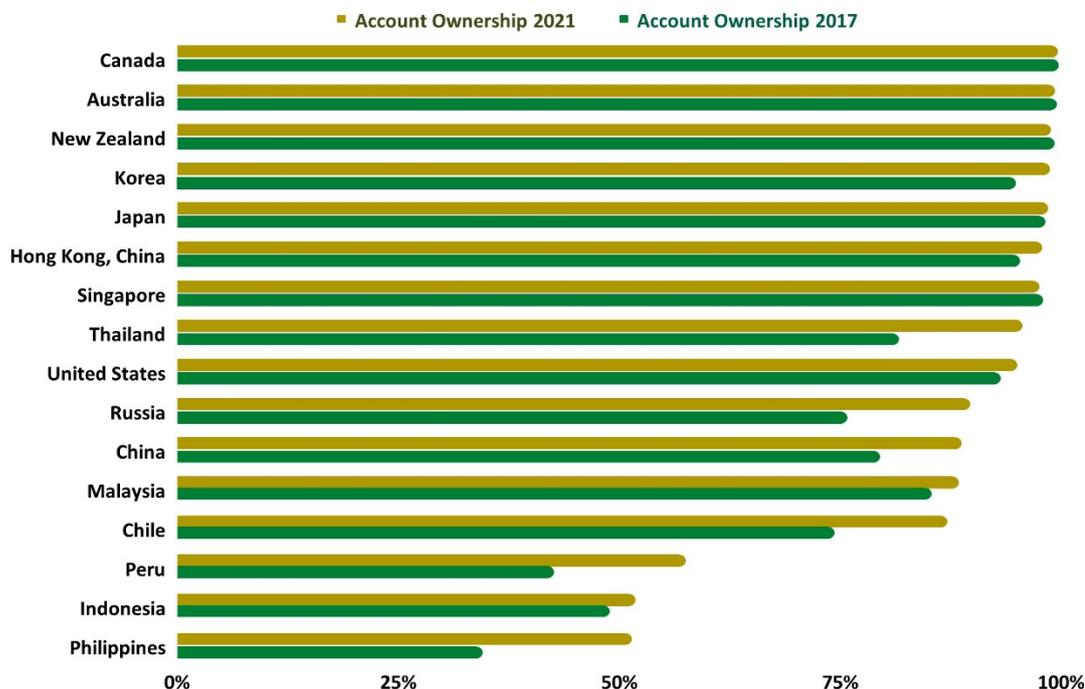
**Figure 2: Change in global account ownership, adults with an account (%), 2011-2021**



Source: Global Findex Database 2021.

For the APEC region, a number of economies (for those with data) now have well over 80% account ownership (Figure 3). Developing economies (Thailand, China, Chile, Peru and the Philippines) saw substantial gains. Peru, Indonesia and the Philippines also moved past 50% access.

**Figure 3. Account ownership for selected APEC economies, 2017 and 2021**

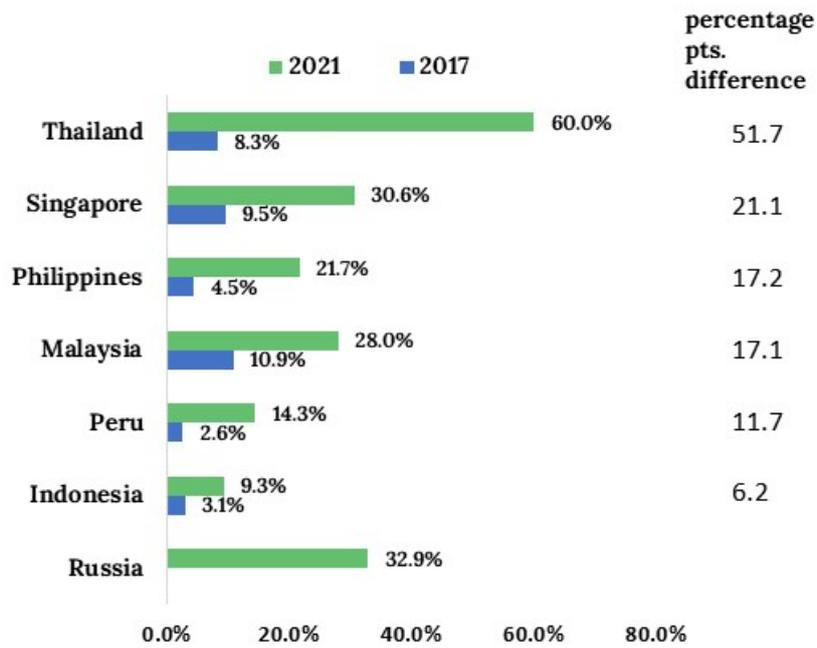


Source: 2021 Global Findex Database.

Note: No available data for Brunei, Mexico, Papua New Guinea, and Vietnam.

**Increase in mobile money accounts.** A major factor in account ownership growth is the significant increase in mobile money accounts (Figure 4). Mobile money accounts increase ranged from 6.2% in Indonesia to 51.7% in Thailand.

**Figure 4. Mobile money accounts for selected APEC economies, 2017 and 2021**

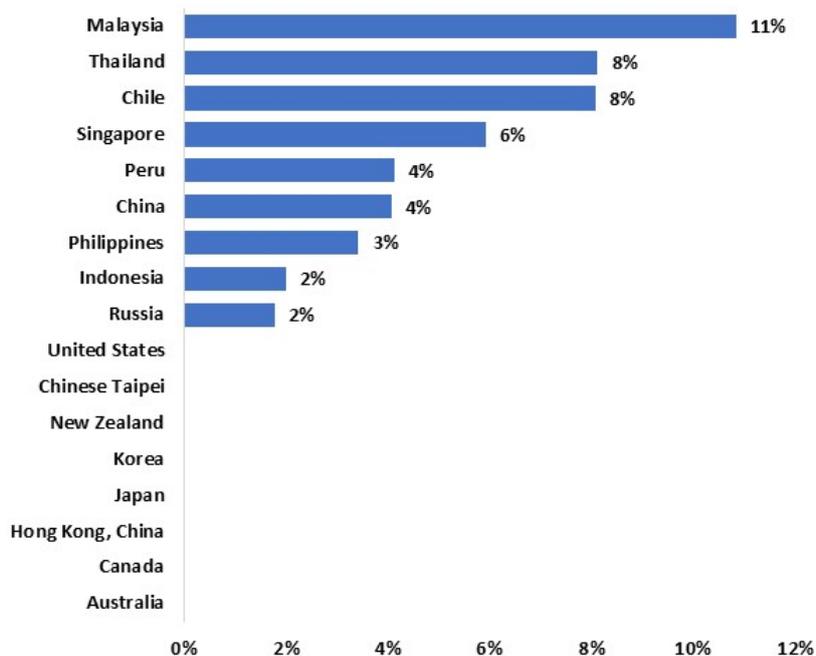


Source: 2021 Global Findex Database.

Note: No available data for other APEC economies. Data for Russia started in 2021.

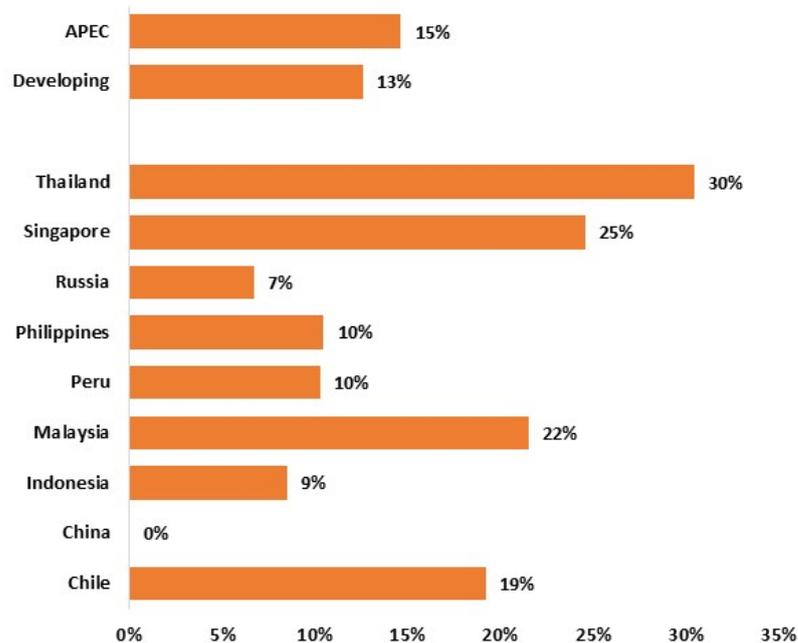
**The unintended consequence of COVID-19.** The important role of the COVID-19 pandemic is evident in the significant increase in the percentage of new users of digital online and merchant payments after the start of the pandemic (Figures 5 and 6). The increase may be explained by the pandemic restrictions as well as the public authorities' use of digital payment solutions to offer assistance to households.

**Figure 5. Made digital online payment for online purchase for the first time after COVID-19 started, APEC economies, 2021**



Source: 2021 Global Findex Database.

**Figure 6. Made digital merchant payments for the first time after COVID-19 started, selected APEC economies, 2021**



Source: 2021 Global Findex Database.

Note: No available data for other APEC economies. Computation for total and developing APEC is the average of economies with data.

Indeed, the acceleration in the use of digital payment solutions has allowed for greater access – inclusion – to the formal financial system. Access to financial services (with bank accounts or mobile money accounts) provides benefits, particularly, to households and small businesses. It provides a safe and easy way to send remittance to families, pay for purchases of goods and services, receive and pay wages, receive relief and assistance from the government, and save funds for future needs. Likewise, it gives financial security, providing an opportunity to avail of loans and insurance, should the need arise. Consequently, greater access to financial services promotes consumption and investment and, ultimately, contributes to economic growth. These benefits provide the bases as to why financial inclusion is one of the commitments under Goal 8 – “sustained, inclusive and sustainable economic growth” – of the United Nations Sustainable Development Goals (UN 2015).

**Inclusion of women.** Yet, an important factor in economic growth is the role of women and their contribution to economic activity. Less than half of women participate in the labor force, mostly in the informal sector.<sup>2</sup> As discussed above, access to financial services would potentially enhance employment and financial well-being.

According to the 2021 Global Findex Database, the difference between the account ownership of men and women, or the gender gap, in developing economies was at 9% since 2011—this went down to 6% in the 2021 survey.<sup>3</sup> The trend in the APEC region shows a narrowing of the

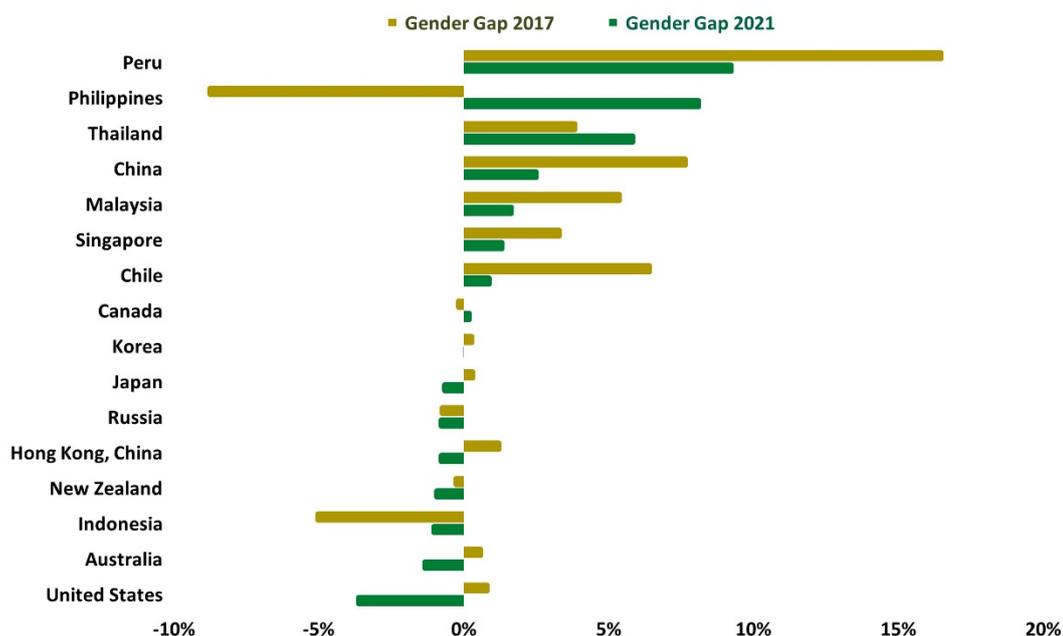
<sup>2</sup> Only 46% of women participate in the labor force, compared to 76% of men. (Source: International Labour Organization, ILOSTAT database. Data as of June 2022.)

Information from <https://www.centerforfinancialinclusion.org/research/womens-financial-inclusion>.

<sup>3</sup> Across all surveyed economies, the gender gap is 4 percentage points with 78% of men having an account against 74% of women. For developing economies, the gender gap had been at 9% since 2011. This went down to 6% in 2021 with 74% of men having an account against 68% of women (Demirgüç-Kunt *et al.* 2022).

gender gap, which is currently small and even inverse in some of the economies with more women financially included than men (Figure 7).

**Figure 7. Gender gap for selected APEC economies, 2021**



Source: 2021 Global Findex Database.

The Philippine data show a move from an inverse gap in favor of women to a large gender gap. A major expansion in digital financial services in the last few years with majority of the new users being male may explain this change.

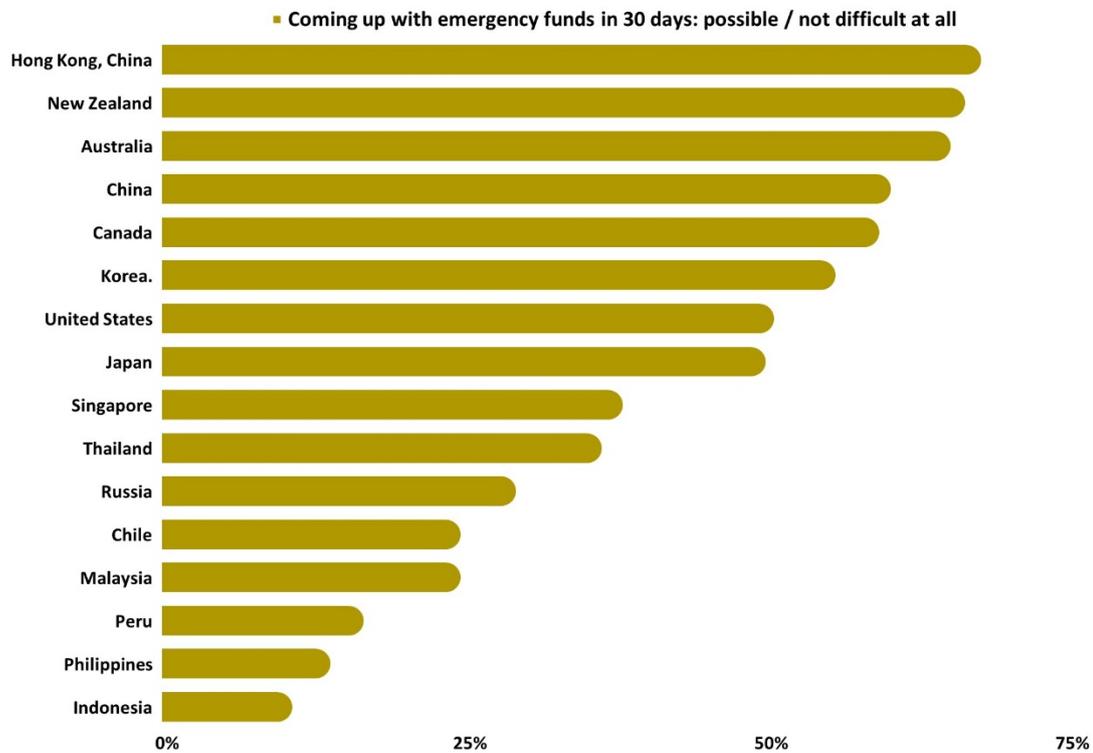
**Financial resilience.** For the first time, the 2021 Global Findex Database has included financial resilience indicators. Figure 8 presents the proportion of adults who are confident that they could come up with funds to meet an emergency within a 30-day period. This proportion is broadly correlated with an economy’s income level and is, therefore, relatively high for advanced economies but falls below a quarter of the population in many developing economies in the region.

**Challenges and risks.** Notwithstanding the significant progress made, challenges remain for digital financial inclusion. Following the 2021 Global Findex Database, about a quarter of adults are still without financial accounts or are outside the formal financial system in 2021 (Demirgüç-Kunt *et al.* 2022), with most of them in developing economies. For most of the respondents in APEC developing economies, insufficient funds is a primary reason for not having an account, followed by the cost of financial services and the distance of the financial institution (Figure 9).

In most developing economies, infrastructure for internet and electricity are still inadequate, diminishing steady accessibility in rural and far-flung areas. For communities with internet and electricity access, the problem is the lack of mobile devices. But even for households with mobile phones, the usage of digital financial services may be hindered by the language barrier when mobile applications are in the English language. Another barrier is the low levels of understanding of the mobile financial apps. For individuals who would like to open financial accounts, one hurdle may be the lack of documentation to verify one’s identity or the lack of

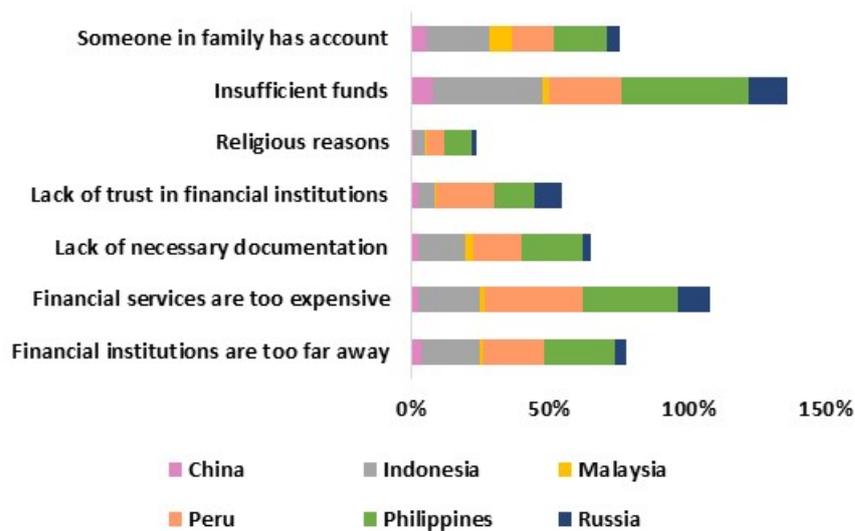
credit history. For some, low levels of understanding of the financial service could lead to misuse or abuse of the service eventually resulting in an individual’s over-indebtedness. Likewise, the user’s low level of understanding allows for fraudulent practices resulting in loss of money. The misuse of personal data may also eventually create distrust of digital financial services.

**Figure 8. Sourcing emergency funds within 30 days for selected APEC economies, 2021**



Source: 2021 Global Findex Database.

**Figure 9. Reasons for being unbanked, developing APEC economies, adults (%), 2021**



Source: Global Financial Index, 2021.

Note: No available data for other developing APEC economies.

In addition, the gender gap may have narrowed but is still present, with 4% recorded across surveyed economies and 6% in developing economies.

Public authorities could work on the physical infrastructure to improve electricity and internet connectivity. They could also provide the infrastructure needed to establish an ID system across the economy that would ease the documentation requirements. In addition, digital financial service providers could program their services to allow for the use of the vernacular as a customer-friendly feature of the service. Moreover, information and educational initiatives, which public institutions and private firms could extend, are critical to the promotion and sustainability of robust digital financial services.

The following chapters will discuss programs and initiatives by private, public and international institutions to address the obstacles and risks mentioned.

## 2. Creating an enabling environment

Economies are aware of the benefits and the important role of financial inclusion in attaining an inclusive and sustainable economic growth so much so that they are committed to adopting policies to further its promotion. Moreover, economies have also recognized that, as was evident in the COVID-19 experience, the digitalization of financial services has truly boosted the reach of financial inclusion.

The chapter presents several strategies and initiatives formulated and implemented by public authorities in selected economies to accelerate digital financial inclusion.<sup>4</sup>

### *Having a comprehensive vision*

Several economies have developed frameworks to achieve their respective long-term visions of digitalizing payments and promoting financial inclusion.

**India.** The Payment Systems Vision 2019 – 2021 of the Reserve Bank of India (RBI) has a core theme “Empowering Exceptional E-Payment Experience” which means to “Empower every Indian with access to a bouquet of e-payment options that is safe, secure, convenient, quick and affordable.” The vision is aimed at: (1) enhancing the experience of customers; (2) empowering payment system operators and service providers; (3) enabling the ecosystem and infrastructure; (4) putting in place forward-looking regulation; and (5) having support by risk-focused supervision.<sup>5</sup>

The framework builds on the foundation established over the last two decades. The goal is not just to have a “less cash” and “less-card” society but also to ensure increased efficiency; and uninterrupted availability of safe, secure, accessible and affordable payment systems to serve segments of the population previously outside the formal payment systems. The vision has four goalposts called the 4 Cs – Competition, Cost, Convenience and Confidence. Creating a regulatory sandbox and authorizing new players is meant to enhance Competition. The presence of multiple players in the market would achieve optimal Cost for the customers. Access to multiple payment system options “anytime-anywhere” would provide Convenience to customers. On the other hand, the “no-compromise” approach on the safety of payment systems would address security vulnerabilities that build customer Confidence.

**The Philippines.** For the Bangko Sentral ng Pilipinas (BSP), the Digital Payments Transformation Roadmap (DPTR) 2020-2023 is the overarching framework for pursuing the interconnected policy objectives of accelerating payments digitalization and expanding financial inclusion in the Philippines. The roadmap aims to facilitate the development of an efficient, inclusive, and secured digital payments ecosystem that caters to the diverse needs and capabilities of individuals and businesses.<sup>6</sup>

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<sup>4</sup> The programs and measures discussed in the chapter feature those discussed in the APEC webinar “*Strategies and Initiatives on Digital Financial Inclusion: Lessons from Experiences of APEC Economies.*”

<sup>5</sup> Based on the presentation of the Reserve Bank of India.

<sup>6</sup> Based on the presentation of the Bangko Sentral ng Pilipinas.

The strategic objectives targeted to be achieved by 2023 are: (1) to transform 50% of the total volume of retail payments into digital form, and (2) to onboard 70% of adult Filipinos in the formal financial system through the opening of transaction accounts.

Three key pillars will help achieve the strategic objectives under the Roadmap. These are: (1) Digital Payment Streams, which focus on creating digital payment use cases that will fuel wider acceptance and use of digital payments services; (2) Digital Finance Infrastructure enhancements, which support digital payments adoption through better security, efficiency and interoperability within the payments ecosystem; and (3) Digital Governance Standards, which foster financial stability and consumer protection amid broader digitalization through the issuance of regulations and standards that safeguard cybersecurity, customer information confidentiality and data integrity, among others.

**Indonesia.** The Payment System Blueprint 2025 sets the digital payment policy direction of Bank Indonesia (BI). It has the following objectives, to: (1) integrate digital economy and finance within the economy, (2) transform digital banking, (3) interlink fintech and banks, (4) balance innovation and stability, and (5) promote interests of the economy on cross-border payments. In addition, MSMEs are encouraged to use digital finance.

**Malaysia.** The economy's development policy, *Twelfth Malaysia Plan (2021-2025)*, is anchored on three key themes – resetting the economy; strengthening security, well-being and inclusivity; as well as advancing sustainability. One of its four catalytic policy enablers is accelerating technology adoption and innovation. For the financial sector, this would boost digitalization and enhance digital connectivity for inclusive development. Complementing the Twelfth Malaysia Plan, the government designed MyDIGITAL to set the direction of the digital economy and build the foundation to drive digitalization across the economy. Formulated to realize the goals of MyDIGITAL, the Malaysia Digital Economy Blueprint outlines efforts and initiatives that will be implemented up to 2030. The fifth strategic thrust of the Blueprint “Create an inclusive digital society” aims to narrow the digital divide by ensuring every individual participates and reaps the benefits of the digital economy.

Bank Negara Malaysia (BNM) has launched the Financial Sector Blueprint 2022-2026 which sets out development priorities for the financial sector over the next five years. The blueprint is anchored on efforts to foster market dynamism and support sustainable development objectives, with a continued focus on its monetary and financial stability mandates. Advancing digitalization of the financial sector is among the five strategic thrusts stated in the blueprint. The initiatives include future-proofing key digital infrastructures, supporting a vibrant digital financial services landscape, strengthening cyber security readiness and responsiveness, and supporting greater use of technology for regulation and supervision.

### ***Building the infrastructure***

**India.** Between 2014 and 2017, India experienced dramatic growth in financial inclusion. The proportion of the adult Indian population with an account at a financial institution increased from 52.8% to 79.8%, representing over three-hundred million people brought into the formal financial sector over three years. This impressive growth was attributed to the collective impact of three policies called the J-A-M trinity (mSTAR project 2019):

- J – Jan-Dhan Yojana is a financial inclusion scheme of Prime Minister Narendra Modi in 2014 (the complete project name is Pradhan Mantri Jan-Dhan Yojana) that leveraged digital financial inclusion to promote economic and social development. The cornerstone of this policy agenda was the drive to provide all Indians with a zero-balance bank account (which may be opened with any amount of money) that does not require any collateral or security deposit to provide access to banking and financial services.
- A – Aadhaar is the ID scheme for the economy that has provided the majority of the Indian population with a unique biometric-linked 12-digit identification number that can be used as proof of identity. The Aadhaar number served as the *de facto* identification especially for Indians in rural areas who needed to open a bank account for the first time.
- M – Mobile phones’ rapid expansion driven by the Digital India program on mobile phone and internet coverage.

The significant outcome was obtained with the support of the government’s initiatives by the private sector which included commercial banks, international technology companies and fintech startups, and the development sector, which promoted poverty reduction and inclusive growth in India.

***The Philippines.*** The Philippine Identification System (PhilSys) is a digital ID system that provides Filipinos across the economy with the means to establish a verifiable digital identity. This ID is a key enabler for financial inclusion. It enables Filipinos to open accounts, use financial services more efficiently, and participate in an increasingly digital economy. It addresses the often-cited challenge of lack of proper identification and catalyzes innovation in digital finance. PhilSys can also be the foundational platform for efficiencies and innovations in government and private transactions.

The BSP is actively involved in the implementation of the PhilSys as the Philippine Statistics Authority’s (PSA) in producing the PhilSys cards. The BSP is also the Chair of the Inter-Agency Committee on Use Case. As chair, the BSP supports the creation of necessary policies, guidelines and standards to promote PhilSys use cases, particularly toward its broad adoption in government and private sector transactions to promote ease of doing business, financial inclusion, improved governance, and seamless delivery of services, among others.

According to the PSA, as of 30 September 2022, over 73.8 million Filipinos have already completed Step 2 registration which captures biometric information (iris and fingerprint scans as well as facial photographs).

In addition, the PSA partnered with the Landbank of the Philippines to enable Step 2 registrants to open a bank account. The Landbank of the Philippines targets to facilitate the opening of accounts for about 13.5 million low-income unbanked individuals from the 32 PhilSys priority provinces. As of the same period, 8.3 million PhilSys registrants have already opened accounts with the Landbank.

To address poor internet connectivity, the BSP and members of the interagency Financial Inclusion Steering Committee endorsed Executive Order No. 127, s. 2021 on “Expanding the Provision of Internet Services through Inclusive Access to Satellite Services.” This order

provides telecommunication and other providers registered in the National Telecommunication Commission to have direct access to the satellite system, allowing them to build and operate broad band facilities and offer internet services.

***Digitalization of payments and establishing interoperability***

***The Philippines.*** In 2013, only one percent of total retail payments volume were done electronically. However, the BSP 2021 Report on E-Payments Measurement (BSP 2021a) shows that the share of monthly digital retail payments based on total volume has significantly increased to 30.3% or 1.4 billion digital payment transactions out of 3.3 billion total retail payment transactions. Meanwhile, the share of the value of monthly digital payments substantially grew to 44.1% or Php 4.66 billion digital out of Php 5.91 billion total value of retail payment transactions.

<b>% Share of Digital Payments by Volume</b>				
<b>2013</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
1%	10%	14%	20.1%	30.3%

The remarkable increase was made possible by the adoption and implementation of the National Retail Payment System (NRPS)—a policy and regulatory framework that provided policy direction in carrying out retail payment activities through financial institutions supervised by the BSP. The rise in digital payments adoption can also be attributed to the collaborative efforts of the BSP and payments industry participants in implementing strategic initiatives under the BSP Digital Payments Transformation Roadmap.

The NRPS has made financial services in the Philippines more accessible and inclusive through its core principles of interoperability and inclusivity. The establishment of the automated clearing houses, which are essentially multilateral legally binding agreements among clearing participants, helped achieve the interoperability of the retail payment system. An automated clearing house governs clearing and settlement determination among payment service providers (PSPs). Interoperability enables easy fund transfer whether one maintains an account with a bank/non-bank or e-money issuer or vice versa.

The NRPS also ensures that all qualified PSPs and financial institutions supervised by the BSP have non-discriminatory access to the payment system. This fosters competition, which provides a broader range of financial products and services for customers. This, in turn, encourages the further widening of the digital finance providers’ market base.

The NRPS’ work with industry uses the concept of “cooperation.” While this is an area for competition among the industry players, this is also a cooperative sphere among financial institutions and non-financial institutions (such as operators of automated clearing houses and fintechs). Industry players compete on innovation with their business models, pricing and the features of products and services. However, they have to cooperate in the area of clearing and settlement to ensure interoperability, inclusivity, efficiency, safety and resilience of the system.

Another essential component of the NRPS framework is strengthening the governance structure. Before the implementation of the NRPS, the governance of the retail payment system was fragmented. The establishment of the Payment System Management Body strengthened

governance. Comprised of representatives from different stakeholders, the group manages risk and regulates its members through the creation of rules, risk monitoring, auditing and compliance and the development of a clear overall regulatory framework. The BSP, in turn, is the primary overseer of the retail payment system, given its critical role in the financial infrastructure. Thus, the multi-stakeholder representation of the Payment System Management Body allows stakeholders to have a voice in the policymaking and governance of the entire payment system, to arrive at solutions that will work best for the entire retail payment industry. The Philippine Payments Management Inc. has been designated by the BSP as the Payment System Management Body pursuant to Republic Act No. 11127 or the National Payment Systems Act.

Since these policies were already in place prior to the pandemic, the financial sector was ready and able to facilitate the significant increase in digital payments arising from the pandemic restrictions.

More recently, to further the digitalization of payments, the government issued Executive Order No. 170, s. 2022 mandating the use of digital payments for government collections and disbursements. While this is in line with the government's thrust to develop an inclusive digital finance ecosystem, it will also facilitate the distribution of financial assistance to beneficiaries.

**India.** An important initiative in India's payment system is the Unified Payments Interface launched by the National Payments Council of India in April 2016. The platform provides low-cost, large-scale payment interoperability, which allows customers to make payments directly from their bank accounts with only a Virtual Payment Address linked to the recipient's bank account and phone number.

**Indonesia.** Bank Indonesia started BI-FAST, Indonesia's fast payment system in 2021. The BI-FAST is a payment infrastructure that facilitates retail payments using various instruments on a 24/7 basis. Membership currently includes 52 banks and non-bank financial institutions. BI also launched the National Standard on Open Application Programming Interface (API) for Payment. This initiative promotes interconnection, interoperability and compatibility, interlinkage between banks and fintech, thus, creating a level playing field that would mitigate shadow banking.

**Radical digitalization of the payments system.** Cambodia and the People's Republic of China are examples of economies that have adopted radical solutions to the digitalization of the payments systems.

**Cambodia.** In 2019, Cambodia launched the Bakong system, an inter-bank mobile payment platform that acts as the backbone of the Cambodian payment and settlement infrastructure. The primary objectives of the system are to improve the efficiency and safety of the payment system, boost financial inclusion and promote cashless payments in the local currency. The system was co-developed with the SORAMITSU Group.

Bakong, which is not a central bank digital currency, allows for interoperability between banks and financial institutions in a safe and cost-effective manner. It is a two-tiered system, the National Bank of Cambodia (NBC) mints the Bakong and is, in effect, purchased by the financial institutions using their reserves in the NBC and distributed to their end users. The Bakong core ledger records wholesale and retail transactions between banks, microfinance

institutions, payment service providers, savings and credit cooperatives, and other financial system players – all in real time.

The system is a relatively conservative implementation of the digital currency concept, which requires minimum legislative interventions and involves minimum risks for the commercial players. Therefore, it is important to win private sector buy-in and encourage the system's uptake by the end-users and the financial institutions.

The Bakong payment infrastructure is a Cambodian success (Figure 10). As of 2021, there are currently over 200,000 users of the Bakong digital wallet, while more than 5.9 million users have benefitted indirectly through online banking apps connected to the system. There were more than 1.4 million Bakong transactions recorded in the first half of 2021 alone, with a total transaction value of around \$500 million. Twenty-five financial institutions participate in the system and cash in/cash out coverage stands at 100% across the economy.

**Figure 10. Bakong: A Cambodian Success**



*Source:* Presentation of the National Bank of Cambodia and the SORAMITSU Group during the APEC webinar.

**The People's Republic of China.** The People's Bank of China (PBoC) has three motivations for developing the e-CNY, its central bank digital currency (CBDC). The first motivation is to improve the efficiency of the central bank payment system by extending the operating hours, expanding accessibility and enhancing operability. The e-CNY system extends the operating hours to a 24/7 system with interoperability with many types of institutions and is not limited to traditional commercial banks. The second motivation is to provide a backup or redundancy for the retail payment system to ensure business continuity. The third motivation is to enhance financial inclusion.

**Characteristics.** The e-CNY is a legal tender. It is identical to the physical currency but is in a digital form. It is simply another form of central bank money backed by the sovereignty of the central bank.

Under the two-tier system, the central bank serves as the first tier that will issue e-CNY to the second-tier authorized operators. The second tier will exchange and distribute the e-CNY to the public.

**Enhancing financial inclusion.** The product design and business model of the e-CNY helped enhance financial inclusion. Being account-based and value-based, the system avails of multiple kinds of product systems in terms of software and hardware to cater to the needs of the unbanked groups under certain circumstances, such as those who have no Wi-Fi connection,

as the e-CNY wallet could still function even offline. Several user-friendly product designs are being explored to address the needs of different groups of customers, such as the elderly, physically challenged, children and foreign visitors.

### ***Adopting QR codes to facilitate the digitalization of payments***

***The Philippines.*** The key contributors to the overall growth of digital payments were merchant payments, person-to-person (P2P) remittances, and business payments of salaries and wages to employees – all of which are high-frequency, low-value retail transactions.

In November 2019, the payment industry participants led by the Philippine Payments Management, Inc., under the guidance of the BSP, launched the “QR Ph,” as the QR Code standard of the economy. The first use case of QR Ph is the QR Ph P2P (person-to-person) facility, followed by the QR Ph P2M (person-to-merchant) facility in October 2021. As of end-2021, almost 70% of retail payments are P2M transactions. Furthermore, as of end-September 2022, QR Ph P2M may be used in almost 774,000 merchant locations across the economy, with 18 participating financial institutions. QR Ph P2M, therefore, carries a strong potential to shift merchant payments into digital form.

The BSP has likewise launched the Paleng-QR Ph program which aims to promote cashless payments in public markets and local transportation. On 14 August 2022, the BSP, in collaboration with the Department of the Interior and Local Government (DILG), joined Baguio City in its launch of the Paleng-QR Ph program, as the first local government unit to implement the program. The launch involved financial service providers who assisted market vendors and shop owners in opening transaction accounts and printing QR codes for the stalls.

***Indonesia.*** Launched by Bank Indonesia (BI) and the Indonesian Payment System Association on 17 August 2019, the QRIS or Quick Response Code Indonesian Standard is the economy-wide standard to facilitate QR code payments in Indonesia.<sup>7</sup> QRIS is already in use in 416 districts and 98 cities. It gets support from 51 banks, 30 non-banks and 116,668 merchants (most of which are MSMEs) that use it.

### ***Learning the technology in sandboxes***

Most central banks have adopted regulatory sandboxes to encourage fintech innovation by allowing experiments in a closed environment with fewer regulatory restrictions.

***Papua New Guinea.*** The Bank of Papua New Guinea (BPNG) established its regulatory sandbox to research initiatives for driving financial inclusion. Two of their main challenges were: (1) establishing identification because many people had no documentation and (2) providing connectivity in some communities with no internet access and electricity. The BPNG plans to conduct live testing of the regulatory sandbox in the latter part of 2022.<sup>8</sup>

***Chinese Taipei.*** Remittance is one of the key concerns of the Financial Supervisory Committee (FSC), for which they used their regulatory sandbox. More than 675,000 blue-collar foreign

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<sup>7</sup> <https://qris.id/homepage/?lang=en> Accessed last on 18 October 2022.

<sup>8</sup> Based on the presentation of the Bank of Papua New Guinea.

migrant workers in Chinese Taipei<sup>9</sup> remit about US\$ 3 billion each year. Some challenges for migrant workers in sending remittances are the language barrier, unavailability of banking services during the holidays, high remittance costs and the risks from informal channels. In 2019, the FSC approved two fintech companies to use the sandbox. The tested applications were successful and were implemented in October 2021. The new processes led to a reduction of remittance costs by 1.5%.

**Indonesia.** BI has its own Sandbox 2.0. The latest initiative in the Sandbox implementation is the BI Live Sandbox Space (BLISS) Learning Module microsite (<https://www.bi.go.id/bliss/default.aspx>). The microsite has several learning modules on logistics, digital transactions and how to obtain funding, among others. It is a collaboration of Bank Indonesia and the digital economy players such as fintech and e-commerce companies, banks and payment gateways.

**The Philippines.** The BSP sandbox or test-and-learn approach is a collaborative undertaking between regulators and industry players, be it fintech newcomers or incumbent financial institutions. The approach scrutinizes financial innovations prior to actual deployment or live production. The institutionalization of the BSP's Test and Learn Framework or Regulatory Sandbox has been recently approved.

### ***Working closely with fintech***

**Singapore.** The webinar acknowledged the work of the Monetary Authority of Singapore (MAS) with the fintech industry<sup>10</sup> to transform and innovate Singapore's financial sector. Like other central banks, the MAS has a regulatory sandbox to experiment with innovative digital solutions and has been researching central bank digital currencies, among others. They hold the annual Singapore Fintech Festival to encourage collaborations among fintech firms within and outside Singapore. The MAS is working closely with the Singapore Fintech Association and has established a S\$6 million Fintech Solidarity Grant with the Singapore Fintech Association and AMTD Foundation to support Singapore-based fintech companies during the difficult COVID-19 pandemic.<sup>11</sup>

Another important initiative is the API Exchange (APIX) of the ASEAN Financial Innovation Network (AFIN). APIX was jointly established by the MAS, the ASEAN Bankers Association and the International Finance Corporation.<sup>12</sup> APIX is an open-architecture platform and sandbox where financial institutions and fintech firms from across the globe can collaborate and experiment via APIs. The platform supports financial innovation and financial inclusion in and outside Singapore by facilitating the adoption of APIs and digital solutions.

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<sup>9</sup> Based on the presentation of the Financial Supervisory Committee of Chinese Taipei.

<sup>10</sup> There are about 1,400 fintech firms in Singapore in 2021, a considerable increase from only 50 firms five years before. The local fintech sector was able to get US\$1 billion in equity funding and M&A the year before.

Source: Keynote Address by Mr Heng Swee Keat, Deputy Prime Minister and Coordinating Minister for Economic Policies, at the Official Launch of the Asian Institute of Digital Finance (AIDF) on 3 September 2021. <https://www.mas.gov.sg/news/speeches/2021/keynote-address-by-mr-heng-swee-keat-deputy-prime-minister-and-coordinating-minister-for-economic-policies-at-the-official-launch-of-the-asian-institute-of-digital-finance-on-3-september-2021>

<sup>11</sup> <https://singaporefintech.org/sfa-grants-portal/mas-sfa-amtd/>

<sup>12</sup> <https://www.mas.gov.sg/development/fintech/api-exchange>

### ***Amending regulations to be fit for digital***

***Papua New Guinea.*** The BPNG used its regulatory sandbox to check if its existing regulations are fit for digitalization and whether there is a need to upgrade or modify its standards and regulations for the digital space.

***Chinese Taipei.*** For the remittance case discussed above, the FSC did make regulatory adjustments to their legislation on electronic payment institutions and their regulation governing small-amount remittance services for foreign migrant workers.

***The Philippines.*** Geared toward the effective regulation of the financial industry, the Financial Products and Services Consumer Protection Act strengthens the role of financial regulators in consumer protection. This law helps enhance the public's trust and confidence in the financial system. The BSP also continues to formulate and implement cybersecurity policies to manage potentially heightened risks associated with the greater use of digital and financial payment services. The BSP advocates a "zero trust" model, which requires its supervised financial institutions to treat any access to their digital infrastructure as suspicious.

***Malaysia.*** In support of digitalisation and consumer protection, Bank Negara Malaysia (BNM) has issued policy documents on the following:

- Fair Treatment of Financial Consumers – aims to foster high standards of responsible and professional conduct for financial service providers (FSPs) and promote a culture where the interests of financial consumers are an integral part of FSPs' business strategies and operations. Also, it sets expectations for FSPs to effectively manage risk and assure consumers that FSPs act fairly in their dealings.
- Electronic Know-Your-Customer (e-KYC) – aims to accelerate and streamline practices of industry players in their adoption of e-KYC technology or the online process of identifying and verifying individual customers. With the implementation of e-KYC, customers can open accounts digitally.
- Licensing Framework for Digital Banks of BNM – aims to enable the innovative application of technology to uplift the financial well-being of individuals and businesses, and foster sustainable growth. The framework also includes expanding meaningful access and promoting responsible usage of suitable financial solutions to unserved and underserved segments.

### ***Onboarding consumers and MSMEs***

***The Philippines.*** The BSP is continuously working toward addressing challenges in pursuit of widening financial inclusion in the Philippines. Although internet connectivity remains a concern in broadening access to digital financial services, the results of the 2021 BSP Financial Inclusion Survey (BSP 2021b) showed that the share of the adult population using the internet grew from roughly half (53%) in 2019 to more than three-fourths (77%) in 2021 or equivalent to 59.2 million Filipinos. In addition, the majority (or 60%) of those with mobile phone and internet access conducted online financial transactions (i.e., fund transfers and electronic payments), a considerable increase from only 17% in 2019.

One of the identified barriers toward financial inclusion is the lack of resources. Two key initiatives in place: the Basic Deposit Account (BDA) and digital banking.

The BDA enables Filipinos to open deposit accounts for as low as Php100 or less and with simpler identification requirements. BDA has no maintaining balance and is free of dormancy charges. This initiative addresses the barriers often cited in owning an account, which include high costs, lack of money, inability to meet documentary requirements, and perceived low utility of a bank account. As a result, there was a 19% increase in the number of accounts from 6.6 million in end-2020 to 7.9 million end-2021. There are now 141 banks offering BDAs.

Another critical challenge is limited reach in terms of financial access points, particularly in rural areas. In response, the BSP allows banks to use third-party cash agents, including shops, retailers and stores in remote areas, as a cost-efficient service delivery channel. With cash agents, banks can strategically leverage innovative digital banking solutions to on-board clients and expand their market, even in low-income areas long considered niche and unviable by bigger banks. Based on BSP's Q4 2021 Financial Inclusion Dashboard,<sup>13</sup> there are 58,417 cash agents across the economy, equivalent to a year-on-year growth of 242.5%.

Another alternative for customers is digital banking that offers a more streamlined process and online presence, although some have physical touchpoints. As of end-August 2022, all six BSP-licensed digital banks are operational. Overseas Filipino Bank, Inc. (a digital bank of Landbank), Tonik Digital Bank, Inc., and Maya Bank, Inc. are fully operational. At the same time, Unobank, Inc., UnionDigital Bank, Inc., and GoTyme Bank Corporation have commenced limited operations targeting select customers. From January to June 2022, the volume and value of electronic payments and financial services processed through digital banks reached 1.4 million transactions and Php 8.45 billion, respectively.<sup>14</sup> As of end-September 2022, the total number of deposit accounts opened in these digital banks stood at 1.2 million with Php 3.1 billion worth of deposits.<sup>15</sup>

**Malaysia.** There are several initiatives by the government to promote digital adoption during the pandemic and recovery phase. These include: (1) the ePenjana Programme which provides e-wallet credits given to certain lower-income group segments; (2) the Jaringan Prihatin Programme (2021), which provides internet access or mobile services to lower-income households; and (3) the eBelia Programme (2021) and the ePemula (2022) which help relieve financial burden and promote cashless spending among youths.

### ***Advancing financial literacy***

Imperative to digital financial inclusion, the populace must be digitally financially literate to be able to access financial infrastructure. As emphasized by the BNM in the webinar, “*Digital financial services unlock new pathways for economic growth and job creation but usage must be accompanied with financial education.*”

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[https://www.bsp.gov.ph/Media\\_And\\_Research/Financial%20Inclusion%20Dashboard/2021/FIDashboard\\_4Q2021.pdf](https://www.bsp.gov.ph/Media_And_Research/Financial%20Inclusion%20Dashboard/2021/FIDashboard_4Q2021.pdf)

<sup>14</sup> <https://pia.gov.ph/press-releases/2022/08/24/six-digital-banks-may-now-pursue-full-operations>

<sup>15</sup> Based on the data submitted by Maya Bank, Inc., Overseas Filipino Bank, Inc., Unobank, Inc. and GoTyme Bank Corporation to the BSP Technology Risk and Innovation Supervision Department.

**The Philippines.** Through extensive information campaigns, the BSP orients consumers on how to use digital financial payment services responsibly. For example, the Digital Financial Literacy Program was launched in 2020 to increase public trust and confidence in the digital financial ecosystem and encourage the use of digital financial services. The *#SafeAtHome with E-payments* campaign promotes the usage of e-payment solutions during the COVID-19 pandemic. In addition, the “*E-Safety is Everyone’s Responsibility*” program ensures that financial consumers remain vigilant in practicing cyber hygiene to secure their accounts and online transactions.

**Malaysia.** The Financial Education Network (FEN) was established to coordinate and drive Malaysia’s financial education strategy. The FEN Programmatic Roadmap prioritizes efforts on financial education for consumers to participate in the digital financial environment effectively.

### ***Coming together in collaboration***

The requirements for financial inclusion are broad, including infrastructure on electricity and connectivity. A collaborative approach may better address the lack of resources and capacity.

**Malaysia.** To improve financial literacy through closer collaboration, the FEN serves as an inter-agency platform to increase the impact of financial education initiatives and identify new ones.<sup>16</sup> The members include BNM, Agensi Kaunseling dan Pengurusan Kredit, Suruhanjaya Sekuriti Malaysia, Perbadanan Insurans Deposit Malaysia and Kumpulan Wang Simpanan Pekerja. The FEN will work with relevant government ministries, industry associations, consumer groups and other key stakeholders to implement and monitor financial education initiatives under a coordinated strategy for the economy. A high-level inter-agency steering committee will lead the FEN with the BNM as the chair supported by working groups to drive specific initiatives.

**Indonesia.** The government needed to rely on more than one institution to address the challenges of financial inclusion to support economic growth. Policy harmonization and synergy between ministries and agencies are needed to achieve the economy-wide target. The National Strategy for Financial Inclusion was launched as a platform for synergy among institutions to achieve the financial inclusion objectives of supporting growth, accelerating poverty reduction and reducing disparities among individuals and regions to enhance welfare. The National Board of Financial Inclusion implements the strategy with the President of Indonesia as its chair. The Board consists of 24 ministries and agencies with eight working groups. Bank Indonesia actively participates in all working groups.

**The Philippines.** The Financial Inclusion Steering Committee is the inter-agency governing body that leads the coordinated and collaborative approach to implementing the National Strategy for Financial Inclusion. It also provides guidance in developing various policies, regulations, supervisory frameworks, programs, and initiatives as mandated under Executive Order No. 208, s. 2016. The BSP chairs the committee, which has 21 departments and agencies as members.

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<sup>16</sup> <https://www.bnm.gov.my/-/establishment-of-financial-education-network>

### ***Bottom line***

The message of the BSP in the webinar sums up the role of central banks in the development of financial inclusion:

*“Central banks are increasingly taking on a more proactive role in developing an inclusive digital financial landscape. This could be done by creating an enabling regulatory environment through implementing progressive policies, harnessing the potential of innovation to provide more responsive financial services, building long-term relations with strategic partners from the public and private sectors, and advocating the enhanced financial literacy of the public. ...a whole-of-society approach facilitates holistic actions toward a shared vision of a safer, more efficient, inclusive and secure digital finance ecosystem.”*

Public authorities play a critical role in the adoption of digital financial services as well as in the implementation of game-changing measures in the market. Government represents a major consumer of goods and services; therefore, the digitalization of government transactions (government-to-person, government-to-business and person-to-government) would have a tremendous impact on digital payments.<sup>17</sup> Public authorities have the governance and logistics infrastructure to promote public awareness of fraudulent practices and scams, to conduct financial literacy campaigns and to establish fora for complaints. In addition, dialogues can help public authorities work for efficient systems, interoperability, and encourage responsible technology adoption.

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<sup>17</sup> <https://responsiblepayments.org/governments.htm>

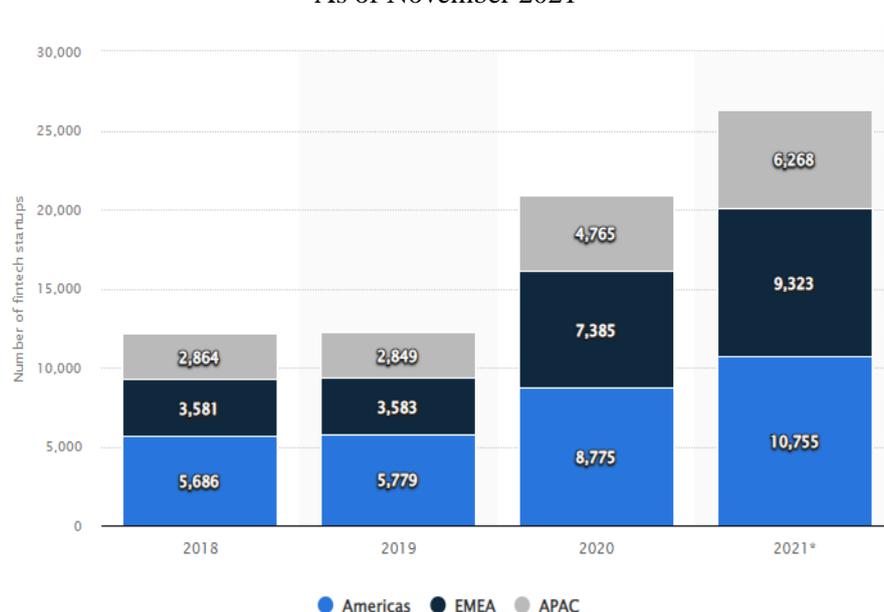
### 3. Onboarding the unbanked and underbanked

Fintech firms have introduced game-changing innovations that have lowered costs, addressed information asymmetries, increased speed, and widened the accessibility of financial services tailored to many people. These firms heavily rely on technology for faster information exchange through digital delivery channels to exploit economies of scale. In addition, the COVID-19 pandemic has further accelerated the demand for and adoption of these fintech services as working preferences, and customer banking habits were altered. Central banks and other financial regulators responded by fast-tracking their digital transformation initiatives and re-calibrating their policies to allow more competition and innovation to prosper, while mindful of the risks involved. As the global economy recovers from COVID-19, fintech companies increasingly provide digital financial services that promote financial inclusion of economically vulnerable populations and integrate them into the global financial system. Eventually, the adoption of fintech solutions is expected to provide consumers, businesses, and governments with better, seamless processes that could result in higher productivity and broaden inclusive economic growth of the economy.

#### *Expansion of fintech*

Most fintech firms are small start-ups that offer specialized services to established firms. Figure 11 shows that the region of the Americas has the most fintech start-ups globally with 10,755 fintech companies, followed by Europe, the Middle East, and Africa region (EMEA), and the Asia-Pacific (APAC) region with 9,323 and 6,268 start-ups, respectively.

**Figure 11. Number of fintech start-ups worldwide from 2018 to 2021, by region**  
As of November 2021



Source: <https://www.statista.com/statistics/893954/number-fintech-startups-by-region/>

Mobile wallets and digital payments are the segments that have attracted the most significant number of entrants. KPMG's Pulse of Fintech pulse series reported that the payments space

continues to attract big investment in the first half of 2022. It accounted for the largest share of fintech investment in the Asia-Pacific region (US\$43.6 billion), followed by crypto (US\$14.2 billion).<sup>18</sup> There has been ongoing strength in the payments sector across numerous jurisdictions. The significant share in the payment ecosystem of fintech firms has challenged and disrupted the operations of incumbent banks.

*Fundamental drivers of fintech.*<sup>19</sup> The availability of affordable smartphone devices with internet connectivity has provided the unbanked and underbanked sectors with an opportunity to avail of the delivery of welfare-enhancing digital financial services by fintech firms. Meanwhile, low-cost computing and data storage allow fintech companies to mine data for insights and produce scalable data-driven business models that reduce information asymmetries and transaction costs. In other words, these two fintech drivers—connectivity and computing—could help extend the financial inclusion frontier by lowering the physical and geographical barriers and increasing access to all while closing the information gaps for credit and other products (World Bank 2022).

### ***Fintech and financial inclusion***

Fintech companies offer wide-ranging innovative and technology-driven products and services which benefit consumers, businesses, and governments. They provide back-end services for banks and insurance, business-to-business, business-to-consumer, government-to-business, government-to-consumer, consumer-to-government, business tools and consumer tools. As a result, incumbent banks can consider fintech companies not as competitors but as entities that provide complementary services (World Bank 2022).

Moreover, fintech increases financial access and delivers new products and services- especially to the unbanked and underserved in rural areas (Figure 12). The following sections discuss some of these financial services.<sup>20</sup>

***Open finance.*** Personal information is necessary for opening financial accounts and availing of financial services, such as deposit accounts or loans. If the customer would like to transact with another financial institution, he or she would need to provide the same set of information to the second institution. In an open finance framework, the customer can authorize the first institution to provide his or her personal information and transactions-related data to the second financial institution.

Awrey and Macey (2022) explained the three intertwined core principles of open finance. The first is *data access* with customers having property rights over personal and transactional information. With data sharing, customers instruct financial institutions to provide their information to other financial institutions. The second core principle, *data portability*, allows for data transfer from one system to another. Platform portability, a type of data portability, may be more relevant in this case, as it utilizes an automated electronic interface in the data transfer. The third core principle, *data interoperability*, explains open finance’s benefits for automation, scalability and efficiency. This emphasizes using standardized protocols to enable two or more systems or applications to exchange and mutually use said information. The

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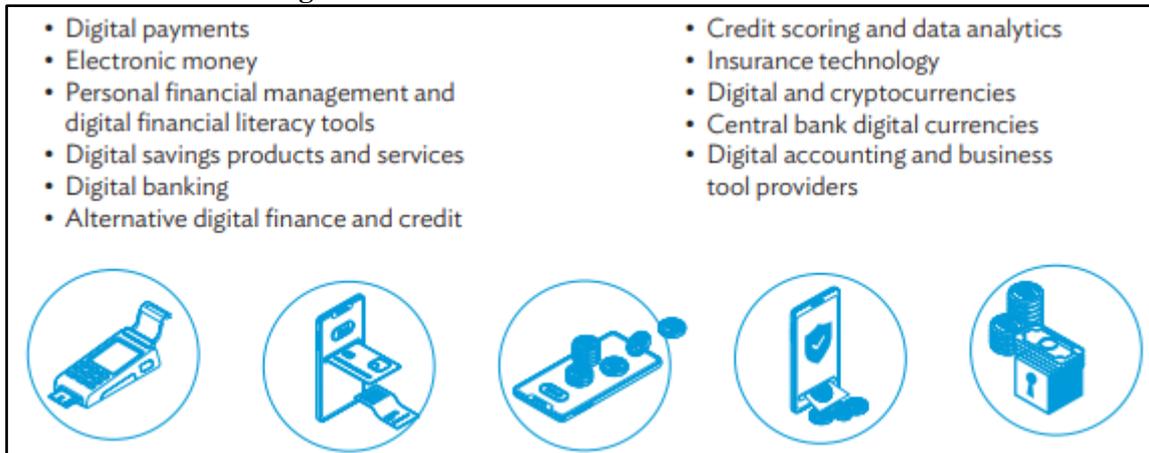
<sup>18</sup> <https://home.kpmg/xx/en/home/industries/financial-services/pulse-of-fintech.html>

<sup>19</sup> See <https://www.worldbank.org/en/publication/fintech-and-the-future-of-finance> for more details.

<sup>20</sup> The initiatives and programs discussed in the chapter feature those discussed in the APEC webinar “*Strategies and Initiatives on Digital Financial Inclusion: Lessons from Experiences of APEC Economies.*”

software protocols used to implement data interoperability are the Application Programming Interfaces (APIs). Open APIs carry out open finance by enabling the access of customer information held by network participants.

**Figure 12: Fintech services for financial inclusion**



Source: Alliance for Financial Inclusion. Fintech for Financial Inclusion. <https://www.afi-global.org/fintech-financial-inclusion>  
This is Figure 3 in ADB (2022).

For the market, open finance promotes competition, improving the price and quality of financial products and services and building the financial system’s resilience (Awrey and Macey 2022). For customers, an open finance ecosystem empowers them, as it gives them control over their personal and financial data and choice on how they interact with financial institutions and financial product and service providers. This could enhance financial inclusion by helping with the problem of documentation and providing access to credit. For individuals without bank accounts who use their e-wallets for daily transactions, open finance can help establish financial footprint (usage history of their e-wallet) that may be considered in lieu of credit scores.

The BSP issued a circular in June 2021 providing the guidelines for the adoption of an open finance framework in the Philippines (BSP 2021c). The circular establishes the Open Finance Oversight Committee, an industry-led self-governing body that shall exercise governance over the activities and participants of the open finance ecosystem. The committee will be supervised and regulated by the BSP. Part of the process is the work on standards, including API standards.

UBX uses its API with its application layer for its open finance platform.<sup>21</sup> This has enabled companies, financial service providers, and other digital and technology platforms to offer their services on the UBX open finance platform.

**Digital banking.** According to BSP Circular No. 1105, a digital bank offers financial products and services that are processed end-to-end through a digital platform and/or electronic channels with no physical branch/sub-branch or branch-lite unit offering financial products and services. With a more streamlined process and online presence, digital banking promotes digital financial inclusion by presenting customers with an alternative means to conduct online financial transactions. As discussed in Chapter 2, there are six BSP-licensed digital banks in the Philippines that are operational (as of end-August 2022) with 1.2 million deposit accounts

<sup>21</sup> Based on the presentation of UBX.

valued at Php 3.1 billion (as of end-September 2022) and 1.4 million transactions valued at Php 8.45 billion.

GoTyme has developed a business model that is interesting for financial inclusion.<sup>22</sup> GoTyme is a partnership between the Philippine Gokongwei Group and the Singapore-headquartered digital banking group Tyme. GoTyme set up kiosks in Robinsons supermarkets owned by the Gokongwei Group where customers can open a bank account, scan their IDs, enter their information, take an ID photo, and receive their debit card.

As of October 2022, there are currently 15 GoTyme kiosks in Metro Manila, with 226 more kiosks to be launched by the end of 2022. By the end of 2023, there are plans to set up about 700 GoTyme kiosks in the Philippines.<sup>23</sup>

Banco Platform<sup>24</sup> is a digital financing platform that caters to the financing needs of small and medium-sized enterprises (SMEs). It offers a deep-tier financing solution to allow enterprises in the entire value chain to optimize cash flow and improve business efficiency. With the bank's platform, SMEs can register their financing requirements and submit loan applications to multiple lenders at one time, allowing SMEs to gain access to financing more quickly and efficiently.<sup>25</sup>

**Alternative data.** A common factor that explains the difficulty in availing of financial services is the lack of documentation, as most credit providers require credit scores or credit histories. For individuals outside the financial ecosystem, however, these data are non-existent.

With new technologies, particularly artificial intelligence (AI) and machine learning (ML), financial service providers can now consider alternative data to assess customers' credit worthiness, among others. However, users of these technologies should be aware that the historical data used in training AI/ML models may lead to biased outcomes that unintentionally exclude unserved or underserved customer segments (Davis 2021).

Using alternative data could help extend credit to those without proper documentation. For example, credit providers could consider a regular bill payment history to demonstrate the customers' payment habits (Kreiswirth *et al.* 2017). Also, alternative data could be more timely and up-to-date than traditional sources. Alternative data could also be less expensive for credit providers and could result in lower prices for customers.

However, alternative data may be erroneous due to a lack of standards or standard coverage for specific data types. Moreover, customers might need help obtaining such data and would not be able to review or correct inaccuracies. Since some alternative data may not be directly related to a customer's financial behavior, it may not improve the customer's credit standing or may have unintended adverse effects. Alternative data related to race, gender or ethnicity may also have discriminatory results.

An example of a fintech working with alternative data is Credolab.<sup>26</sup> With their smartphone and web behavioral data analytics platforms, they provide clients with highly predictive sources

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<sup>22</sup> Based on the presentation of GoTyme.

<sup>23</sup> <https://www.esquiremag.ph/money/industry/gotyme-launch-phygital-digital-bank-a00304-20221021-lfrm>

<sup>24</sup> It is headquartered in Singapore with subsidiaries in China and Japan.

<sup>25</sup> "Singapore-based RootAnt Global introduces BANCER into its BANCO platform to offer a more holistic suite of financial services for SMEs." September 29, 2021. <https://www.banco.com.sg/blog/rootant-introduces-bancer>

<sup>26</sup> Based on the presentation of Credolab.

of behavioral data to make better credit-scoring decisions. Credolab noted that the top two issues faced by banks and lenders are lack of credit history data and high occurrence of fraud. However, the traditional credit bureau score is outdated, biased and inaccurate. Therefore, Credolab uses combined traditional, transactional and alternative behavior data to assist clients with credit scoring, fraud detection, and marketing through data enrichment. For example, traditional data from the credit bureau shows payment history. Transactional data from banks, telecommunications firms and utility companies show the customers' ability to repay. Lastly, behavioral data from mobile devices like social media and psychometric data reflect customers' willingness to pay.

**Central bank digital currency.** After the 2008 Global Financial Crisis, private digital currencies emerged due partly to the erosion of confidence in government institutions. These digital currencies and other cryptocurrencies attempted to prove that peer-to-peer value transfer is possible without central authority through distributed ledger technology (DLT). As a result, digital currencies and other payment systems innovations can increase the speed of domestic and cross-border transactions, reduce transaction costs, and eventually broaden access to the financial system by low-income and rural households.

Thus, several central banks took an interest in the technology. CBDC may offer cost efficiency and greater security to complement the fiat-based payment system. Moreover, a well-designed CBDC could help bring about more equitable and inclusive government service delivery. However, securing buy-in from users and merchants remains a big challenge.

Also, central banks need to address the difficult issues of privacy (how to achieve cash-like anonymity while mitigating illicit transactions), safety (ensuring full confidence in the security of funds in the event of cyber-attacks or bank runs), and flexibility (addressing issues of lack of internet and low-tech capabilities). Moreover, certain requirements, such as internet infrastructure and an economy-wide identification system, can only be provided by the governments.

Chapter 2 featured the work of the PBoC on their e-CNY. The digital e-CNY addresses the concerns of some marginalized segments—the elderly and the physically handicapped.

Another initiative on payments featured in Chapter 2 is the National Bank of Cambodia's Bakong payment system, which was co-developed with fintech firm, the SORAMITSU Group. The primary motivation for its development is to address the financial inclusion agenda of Cambodia.

**Personal financial management.** Strands is a fintech company that provides client banks with innovative digital solutions—for example personal finance management and business financial management, among others—to help them serve their SME customers better. According to Strands, “inclusion is about education” so they help the banks educate their respective customers on managing both asset and liability sides of the customers' balance sheets.<sup>27</sup> With their expertise in AL/MI, they study behavior and needs of SMEs to design better products that will cater to the SMEs' requirements.<sup>28</sup>

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<sup>27</sup> Based on the discussion of Strands in the webinar.

<sup>28</sup> <https://strands.com/>

### ***Fintech inclusion initiatives***

Other than digital financial products and services, fintech firms engage with international organizations to further advance digital financial inclusion. For example, the Ant Group is involved in several projects on women-led MSMEs and digital training.

*Supporting women-led MSMEs.* In July 2022, the Ant Foundation (established by the Ant Group), together with UN Women, launched “*Together Digital*,” a five-year program to support women-led MSMEs and empower them to participate and thrive in the digital economy.<sup>29</sup>

According to the Global Entrepreneurship Monitor 2021, women entrepreneurs comprise about one-third of all businesses operating worldwide. However, most women-led businesses in developing and transitioning economies remain as small businesses in the informal economy (UN Women 2020). Moreover, in 2021, 54% of those financially excluded from the digital economy were women, and women entrepreneurs also experienced more challenges than men in accessing markets and finance (World Bank 2022a).

The program aims to support women entrepreneurs to establish, maintain and expand their businesses in the digital economy through training, access to markets and resources, such as funding and knowledge exchange opportunities. The program already has projects in China and Indonesia.

*Digital training.* In 2018, the International Finance Corporation (IFC) and Alipay jointly launched the program “*10x1000 Tech for Inclusion*.” It is an open and global fintech training platform that enables learners to become drivers of digital economic growth. The program aims to train 1,000 emerging talents and tech leaders each year for the next ten years. In September 2021, the program was enhanced<sup>30</sup> through collaborations with leading global organizations, tech investors, and industry organizations for fully online certificate programs that enable aspiring practitioners to learn from global experts at their own pace.

### ***Bottom line: Extending the financial inclusion frontier***

The following are some of the key insights from the discussions:

*Establishing support mechanisms to encourage the use of digital alternatives.* When a huge percentage of transactions are cash-based, regulators and central banks could encourage digitalization of payment transactions by simplifying processes and giving incentives such as lower compliance costs if merchants shift to a digital approach (i.e., cashless transactions rather than cash). On the other hand, fintech firms could help by simplifying financial apps, with instructions preferably in the vernacular. Financial service providers could also consider the needs of the excluded segments in designing products and services. There is a need for cross-institutional coordination to effect reforms.

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<sup>29</sup> “UN Women and Ant Foundation launch “*Together Digital*” to empower women entrepreneurs in the digital economy.” July 21, 2022. <https://www.antgroup.com/en/news-media/press-releases/2022-07-21-14-49>

<sup>30</sup> “10x1000 Launches “*Flex*” Fintech Program with Partners Worldwide to Bridge Global Digital Skills Gap and Drive Financial Inclusion.” September 15, 2021. <https://www.antgroup.com/en/news-media/press-releases/2021-09-15-16-30>

Establishing regulatory sandboxes is a boost to innovation. Some regulators take a more proactive stance in promoting innovations. It behooves fintech firms to be more open to sharing experiences and participating in sandbox initiatives.

*Encouraging international collaborations to promote fintech development.* Sponsoring dialogues between regulators and fintech players provides opportunities to discuss and resolve pain points. Sharing success stories of fintech initiatives should also be promoted and replicated. For example, the Indonesia G20 presidency has an ongoing project on an online database of successful use cases of digital innovations for SMEs and financial inclusion (also discussed in Chapter 4). The database will document and promote good practices.

*Establishing critical infrastructures.* Foundational infrastructure, such as the economy-wide ID system and centralized credit bureau, would be essential in minimizing identity fraud and democratizing access to credit information. Open banking and, more broadly, open finance initiatives promote information symmetry and democratize access to credit information while safeguarding data privacy.

## 4. Shepherding global efforts

International organizations have a crucial role in promoting digital financial inclusion, especially among developing economies. These organizations can serve as catalysts, particularly in economies whose governments have limited capabilities, technical know-how and resources to promote digital financial inclusion among their respective populations.<sup>31</sup>

### *Frameworks of growth and sustainability*

For the macroeconomy, Sahay *et al.* (2020), with a sample of 52 economies, found that digital financial inclusion was positively correlated with economic growth. Rekha *et al.* (2021) also pointed to a positive association between financial inclusion and economic growth, and stressed the significance of a conducive economic environment to allow sustained economic growth. Furthermore, digital finance can likewise contribute to inclusive growth as broadening financial access can prompt productivity and investment, decrease poverty, empower women, build stronger public institutions and enable a profitable and sustainable business model for financial services providers (Manyika *et al.* 2016). Cognizant of these relationships, international organizations have worked across borders to put in place measures to establish and sustain financial inclusion and advance it further by leveraging digital technology.

As early as 2010, the G20 leadership recognized financial inclusion as one of the main pillars of the global development agenda. Accordingly, the group established the Global Partnership for Financial Inclusion (GPFI) to institutionalize and continue its work on financial inclusion.<sup>32</sup> Currently the implementing partners of the GPFI include the Alliance for Financial Inclusion (AFI), the Consultative Group to Assist the Poor (CGAP), the International Finance Corporation (IFC), the World Bank Group, the SME Finance Forum, the Organisation for Economic Co-operation and Development (OECD), the Better Than Cash Alliance and the International Fund for Agricultural Development.

In 2016, to provide direction to concerted efforts towards advancing digital financial inclusion, the G20 set out its High-Level Principles for Digital Financial Inclusion (Box 1). It aims to mobilize action toward greater adoption of digital platforms to broaden financial inclusion. The comprehensive list recognizes the need for legal frameworks, consumer protection, financial literacy, infrastructure, customer identification and data measurement and evaluation systems, as well as balancing between innovation and risks. The principles, likewise, recognize the inadequate access for marginalized segments of the population and the need to provide quality and relevant digital financial products and services to the financially marginalized and underserved (G20 2016).

In 2019, the APEC Host Economy Chile prepared an APEC Roadmap on Digital Financial Inclusion with support from the OECD. The Roadmap contains key elements such as strategic approach, financial consumer protection in a digital age and ensuring safe and effective usage with digital financial literacy. APEC economies were invited to voluntarily report the implementation of the Roadmap in their respective economies for November 2021 and January

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<sup>31</sup> The programs and measures discussed in the chapter are limited to those discussed in the APEC webinar “Strategies and Initiatives on Digital Financial Inclusion: Lessons from Experiences of APEC Economies.”

<sup>32</sup> <https://www.gpfi.org/about-gpfi>

2022. The responses received reflected the sweeping global efforts to advance digital financial inclusion. Consistent with the discussion in Chapter 2 on public authorities, a number of APEC economies have established strategic approaches to digital financial inclusion (most often as part of the financial inclusion strategies) and enabling the environment to encourage innovation (digital identification and regulatory sandboxes, among others), and have started to build up capacities for digital infrastructure to facilitate access for vulnerable and disadvantaged groups (OECD 2022). In addition, there have also been substantial measures towards financial consumer protection and financial literacy.

### **Box 1. G-20 High-Level Principles for Digital Financial Inclusion**

1. ***Promote a Digital Approach to Financial Inclusion.*** Promote digital financial services as a priority to drive development of inclusive financial systems, including through coordinated, monitored, and evaluated national strategies and action plans.
2. ***Balance Innovation and Risk to Achieve Digital Financial Inclusion.*** Balance promoting innovation to achieve digital financial inclusion with identifying, assessing, monitoring and managing new risks.
3. ***Provide an Enabling and Proportionate Legal and Regulatory Framework for Digital Financial Inclusion.*** Provide an enabling and proportionate legal and regulatory framework for digital financial inclusion, taking into account relevant G20 and international standard setting body standards and guidance.
4. ***Expand the Digital Financial Services Infrastructure Ecosystem.*** Expand the digital financial services ecosystem—including financial and information and communications technology infrastructure—for the safe, reliable and low-cost provision of digital financial services to all relevant geographical areas, especially underserved rural areas.
5. ***Establish Responsible Digital Financial Practices to Protect Consumers.*** Establish a comprehensive approach to consumer and data protection that focuses on issues of specific relevance to digital financial services.
6. ***Strengthen Digital and Financial Literacy and Awareness.*** Support and evaluate programs that enhance digital and financial literacy in light of the unique characteristics, advantages, and risks of digital financial services and channels.
7. ***Facilitate Customer Identification for Digital Financial Services.*** Facilitate access to digital financial services by developing, or encouraging the development of, customer identity systems, products and services that are accessible, affordable, and verifiable and accommodate multiple needs and risk levels for a risk-based approach to customer due diligence.
8. ***Track Digital Financial Inclusion Progress.*** Track progress on digital financial inclusion through a comprehensive and robust data measurement and evaluation system. This system should leverage new sources of digital data and enable stakeholders to analyze and monitor the supply of – and demand for – digital financial services, as well as assess the impact of key programs and reforms.

Source: Group of Twenty (G20). 2016. G20 High-Level Principles for Digital Financial Inclusion. <https://www.gpfi.org/sites/gpfi/files/G20%20High%20Level%20Principles%20for%20Digital%20Financial%20Inclusion.pdf>.

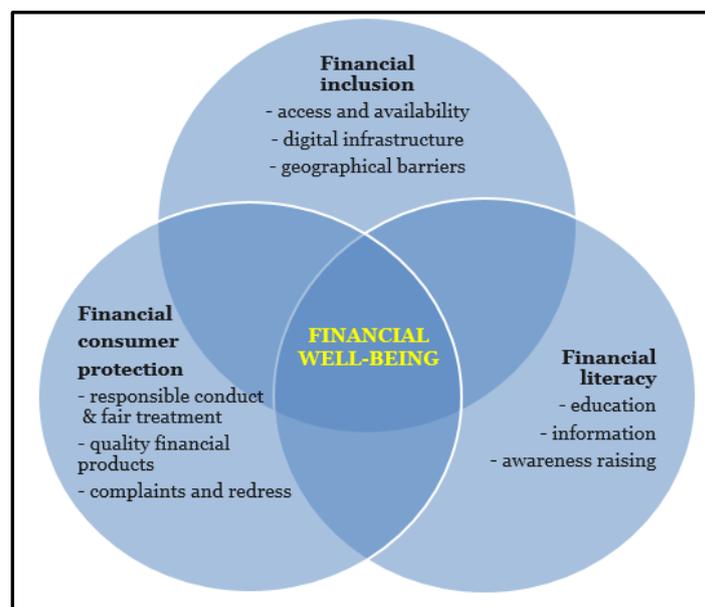
Additionally, the United Nations Principles for Responsible Digital Payments define “who needs to be responsible, what it means to be responsible and how to be responsible”<sup>33</sup> for digital payments. These principles, developed by the UN-based Better Than Cash Alliance (BTCA) focus on women as a key cornerstone for sustained and responsible development, adoption of new technologies and the scrutiny of all aspects of digital payments.

Still, digital financial inclusion is not an end in itself. International organizations are also promoting digital financial inclusion because of its expected positive outcomes. These outcomes include reduced poverty, better health, gender equality, and, in general, the achievement of the identified Sustainable Development Goals in the 2030 Agenda of the United Nations General Assembly (UNSGSA 2018).

In particular, digital finance should provide low-income households with access to affordable and convenient tools to create economic opportunities leading to increased financial well-being and health. The UNSGSA Financial Health Working Group defines financial health or well-being as “the extent to which a person or family can smoothly manage their current financial obligations and have confidence in their financial future” (UNSGSA 2021a).

Financial inclusion, financial consumer protection and financial literacy help achieve financial well-being (Figure 13). Policies promoting financial inclusion provide access to digital infrastructure and reduce geographical barriers. Financial literacy develops knowledge, skills, attitudes and behaviors necessary for individuals to be aware of risks in using digital financial services and digital technologies. Financial consumer protection refers to framework and regulations and other measures designed to ensure fair and responsible treatment of consumers in their purchase and use of financial products and services and their dealings with financial service providers. Together, these three creates financial well-being for the individual.<sup>34</sup>

**Figure 13. Financial well-being arising from financial inclusion, consumer protection and financial literacy**



Source: Presentation of OECD FinCoNet in Webinar

<sup>33</sup> <https://responsiblepayments.org/>

<sup>34</sup> Based on presentation of OECD FinCoNet.

### ***Information on hand—indicators and databases***

Financial inclusion is measured in three dimensions: (i) access to financial services; (ii) usage of financial services; and (iii) the quality of the products and the service delivery (GPFI 2016). In 2012, the G20 leadership endorsed the initial set of the so-called G20 Financial Inclusion Indicators based on the work done by the GPFI. The set has since grown especially with the advent of digital technology and the availability of data on the demand and supply sides of digital financial services.

The World Bank regularly publishes the Global Findex Database with updated data and indicators on the access and use of formal and informal financial services ranging from payments to savings and borrowing. In addition, it provides information on behaviors that enable financial resilience.

More recently, a database is being built as part of the G20 Presidency of Indonesia 2022 with the GPFI and SME Finance Forum. The database will showcase successful examples of digital and innovative non-credit financial products and services to help MSMEs, especially women entrepreneurs, youth entrepreneurs, and social finance recipients. Examples of innovative non-credit financial products and services include digital payments, insurance, factoring, leasing, guarantee, and other risk management products. The database of digital and innovative financial products and services for MSMEs beyond credit can be accessed through this link: [G20 SME Case Studies](#).<sup>35</sup>

### ***The marginalized in front and center***

Access to available and affordable financial services helps empower vulnerable and underserved groups that include women, youth, the financially underprivileged, rural communities, informal workers, migrant workers, and MSMEs (UNCTAD 2021). Digital financial inclusion has also been making headways in promoting women's empowerment as well as providing security and prosperity. Digital technology can be a linchpin, providing safe and secure access to economic opportunities for women to generate and increase household incomes (UNESCAP 2022). In addition, increased digital finance provides opportunities to MSMEs to increase incomes, access the e-commerce market, optimize operations, improve business models, and tap innovative financial solutions (UNSGSA 2021).

However, with the development and further sophistication of fintech and digital finance, there is a growing concern about uneven access to the needed physical infrastructure or insufficient human capital. These can generate new sources of financial exclusion, especially among the same groups—women, the low income and the elderly (G20 2019). In particular, the same data and algorithms being used by digital finance to profile consumers may continue the biases present in historical data that perpetuate unfair treatment and exclusion of certain segments of the population (Sahay *et al.* 2020). International organizations should be able to monitor and respond to this growing challenge and anticipate its adverse impact on marginalized populations by directing their efforts on these populations.

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<sup>35</sup> <https://www.g20smecasestudies.org/case-studies>

Institutions with such financial products and services were encouraged to contribute case studies. Selected cases will be included in a G20 summary report.

Source: <https://www.smefinanceforum.org/post/g20-database-is-open-for-submissions>

*Focus on women.* In a Women's World Banking (WWB) study, Dimova *et al.* (2021) cited the 2020 Mobile Gender Gap Report noting that women continue to lag behind men in the access and use of mobile and internet access. The gender gap in mobile phone ownership averages 8% in low- and middle-income economies, ranging from 1% in Latin America and the Caribbean to 23% in South Asia. In addition, WWB mentioned the limiting focus of the private sector and government in promoting women's financial inclusion with strategies that aim to enhance financial inclusion in general but are not specifically focusing on women as the main target in financial inclusion.

Similarly, the Consultative Group to Assist the Poor (CGAP) works for gender equity in financial inclusion taking into account the restricting social norms involving women that are not usually understood or factored into policymaking.

Similarly, although on a national scale, India's Self-Employed Women's Association (SEWA)<sup>36</sup> focuses on low-income, self-employed women from the informal economy. With the advancement of digital financial services, digital financial inclusion has become a major concern of the organization. SEWA's approach is to create and build the capacity of capacitate cadre of trainers from the communities. The trainers then go back to their communities and teach, creating a cascading effect.

*Promoting SME growth.* The SME Finance Forum is a global network of financial institutions, technology companies, and development finance institutions that works toward the growth of SMEs by promoting innovation through knowledge sharing. One initiative of the SME Finance Forum is the annual Global SME Finance Awards, which recognizes and rewards innovations in small business lending that can improve financing for SMEs, particularly women-owned SMEs. Such innovations can help small businesses grow, especially previously underserved and unserved SMEs, by lowering costs and creating jobs.

### ***Risks from digital financial services***

Aside from concerns about being financially excluded, the advancement of digital financial services has also given rise to risks for the users. Chalwe-Mulenga *et al.* (2022) have identified 66 consumer risks from the use of digital financial services. Some of these include: mobile app fraud, synthetic identity fraud, and artificial intelligence risks, such as algorithmic bias. The risks are grouped into fraud, data misuse, lack of transparency, and inadequate redress mechanisms. In addition, there are two cross-cutting risk types: agent issues and network downtime. Fraud, data misuse, network downtime and agent risks are directly linked to cyber security. Agent issues and network downtime both tend to impair the delivery of digital financial services to underserved and low-income consumers.

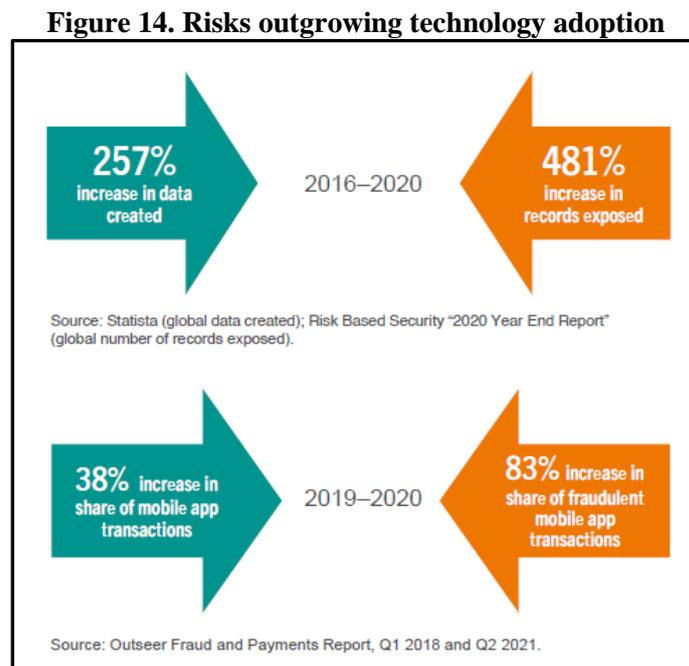
The study also noted that some risks are growing faster than the adoption of digital financial services. Figure 14 shows a 481% increase in records exposed from 2016 to 2020, higher than the 257% increase in data created. There was also an 83% increase in the share of fraudulent mobile app transactions for 2019-2020, more than the 38% increase in mobile app transactions.

The harmful effect of these risks is not limited to the loss of money of one user in one transaction. Fraud tends to erode trust and confidence in the financial system (Chalwe-Mulenga

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<sup>36</sup> <https://www.sewa.org/>

*et al.* 2022). If the fraud incident is not addressed properly or satisfactorily, this one user will stop using the digital financial service and may influence other customers to do the same.



Source: Chalwe-Mulenga *et al.* (2022)

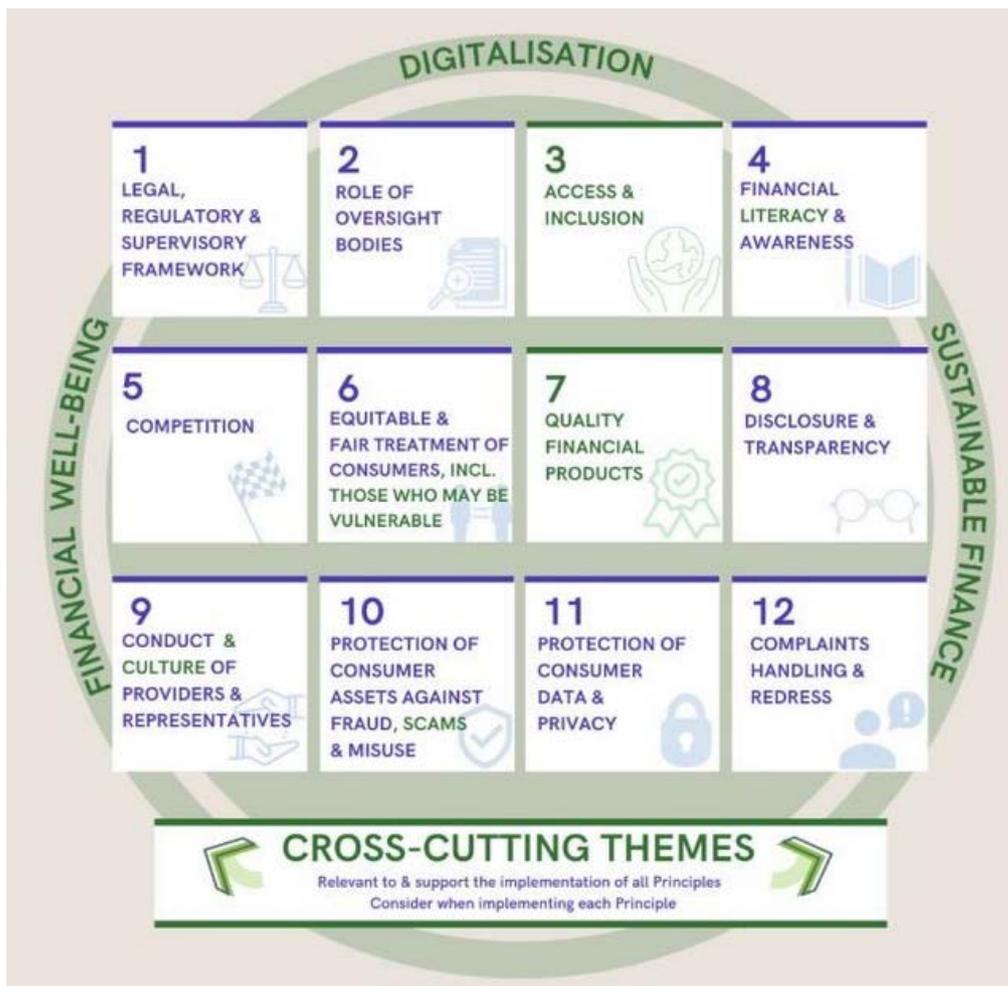
The G20/OECD High-Level Principles on Financial Consumer Protection were developed in light of the global financial crisis, serving as the international standard for financial consumer protection (Figure 15). Many economies have adopted these principles as the basis for establishing or enhancing their financial consumer protection framework. The principles also contribute to public trust and confidence in the financial system. It also supports financial resilience and inclusion to promote fair and responsible treatment of consumers, including the unbanked.

Low-income women and rural customers are more vulnerable to these risks because of low digital literacy and financial skills. Thus, digital financial literacy is essential to lower and mitigate the impacts of these risks. For SEWA, financial literacy has always been at the core of its work. With the new technology, digital financial literacy becomes a driving factor because they would not want the low-income women from the informal economy to be left out of the developmental process. Due to the often limited education of these women, continuous hand-holding is very much needed initially until they build their confidence in using digital applications.

The Women's World Banking cited their experience in promoting digital financial services with women factory workers in Bangladesh and Cambodia. Due to the women's insufficient skills and knowledge, the approach was to have a reliable person whom the women trust to be the touchpoint or ambassador in their learning journey. Thus, building financial capacity for these women consists of: 1) building knowledge, 2) building attitude, and 3) building skills to using these services.

The G20/OECD International Network on Financial Education (INFE) has established policy guidance on the implications of digitalization across the financial sector and provides approaches to strengthening digital financial literacy (OECD 2018).

**Figure 15. G20-OECD High-Level Principles on Financial Consumer Protection**



Source: Based on presentation of OECD FinCoNet.

### ***Research and knowledge sharing***

International organizations also support digital financial inclusion through evidence-based research and knowledge sharing.

- The Center for Financial Inclusion, a global think-tank, investigates new issues and engages with industry to help address the needs of underserved segments.
- The Alliance for Financial Inclusion is a policy leadership alliance of central banks and financial regulatory institutions that advances digital financial inclusion through peer learning or sharing knowledge and experiences among the members to provide information and guidance on best practices.
- The BIS Innovation Hub likewise works with central banks to enhance the understanding of fintech, foster innovation and develop innovative solutions to benefit and improve the financial system.
- Women’s World Banking conducts qualitative and quantitative research on market and consumer issues important to design commercially viable solutions to address the barriers to advancing women's economic empowerment

*Emerging trends.* Research should also look into emerging issues. One issue discussed is embedded finance<sup>37</sup> which is embedding financial products and services in real-sector digital platforms that are typically not focused on the financial sector. Examples include Grab, GoTo and Shopee platforms, which offer merchants and consumers financial products such as loans and insurance.

One crucial sector where embedded finance can contribute toward digital financial inclusion is agriculture. In Asia, more than 2.2 billion people rely on agriculture as a source of livelihood (Asian Development Bank 2012). Rural communities have the most considerable challenge in accessing finance. The lack of access to financial services makes it difficult for farmers to manage risks and fund investments that guarantee more stable income (UNSGSA 2018).

The past few years saw the emergence of agricultural technology startups called agtechs. Agtechs help connect farmers to markets and provide important agriculture-related information that increases the farmers' yield and productivity. Some agtech innovations embed financial products, such as loans and crop insurance, to help farmers and small agricultural businesses access finance. There are over 50 agtechs in Indonesia and almost 100 agtechs in India. The IFC is working with agtech companies to expand their embedded finance by connecting with and investing in banks and other fintech players.

Another emerging issue with a lot of potential in the future is the intersection between digital financial services and climate change. An example of this is the Operate Solar Pay-as-You-Go business for farmers without electricity access. The business model uses digital payments (e-wallets) to access solar energy. According to the IFC, access to energy is an important global problem, with more than 850 million people not having access to electricity and over a billion people connected to unreliable power grids. The pay-as-you-go business model has been successful and has expanded beyond Operate Solar to include other productive uses with digital payments such as solar water pumps for irrigation and cooking stoves. These are some of the cases where a real sector solution helps mitigate climate change and at the same time drive financial inclusion.

### ***Bottom line***

What stands out from the above discussion on the work of international organizations is the extent and strength of collaborations. Almost all initiatives involve the participation of several institutions across economies and sectors—public authorities, financial institutions, fintech firms and consumer groups. There are extensive dialogues and consultations. Learning is primarily done through peer learning and sharing of best practices and experiences.

In view of the broad scope of influence and implications of digital financial services, collaboration could, perhaps, be extended to the inclusion of “new players” on the public side – competition authorities and data protection agencies, for example.<sup>38</sup> A more focused dialogue or consultation with customers that allow solicitation of their feedbacks could help promote digital financial inclusion. This customer-centric approach would inform policymakers and the designers of the services about the specific needs of customers, particularly the underserved

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<sup>37</sup> Based on presentation/discussion of the International Finance Corporation.

<sup>38</sup> Based on the presentation of the UNSGSA.

and unbanked. This collaboration allows for the voice of customers to be heard and incorporated into policies and product and service design.

## 5. Advancing inclusion through collaboration and synergy

The 2021 Global Findex Database (Demirgüç-Kunt *et al.* 2022) highlights the significant increase in the percentage of people included in the formal financial system as indicated in the increase in account ownership—from 69% in 2017 to 76% in 2021. For some economies, appropriate policies and measures were already in place prior to the onset of the pandemic. For the Philippines, the two automated clearing houses (PESONet and Instapay) of the NRPS have been operating since 2017 and 2018, respectively. This has allowed the system to manage the significant buildup of digital payments starting in 2020. Other economies have likewise stepped up to the challenging situation of the pandemic. Notwithstanding the substantial gains in account ownership, about 25% of the world’s population still do not have financial accounts or are outside the formal financial system.

If the shared goal, as articulated in the Sustainable Development Goals, is equitable and inclusive economic growth, global economies would have to use their resources and act together to get the remaining 25% unbanked population into the fold.

### *Strategies and initiatives that work: Best practices*

- **Collaboration.** Several measures and initiatives of private, public and international institutions involve collaborations:
  - *Collaboration with the private sector.* The BSP has set examples of collaboration with the private sector. A vital component of the successful implementation of the NRPS framework is the establishment of the Payment System Management Body, comprised of representatives from different stakeholders. This arrangement allows for the self-regulation of members and facilitates coordination among members. This arrangement of an industry-led self-governing body will be utilized again in the BSP’s adoption of an open finance framework with the establishment of the Open Finance Oversight Committee.
  - *Collaboration with the fintech industry.* The MAS has an exemplary relationship with the fintech industry in Singapore that truly encourages innovation and facilitates coordination.
  - *Collaboration with other agencies.* The broad scope of financial inclusion calls for coordination with several government agencies. This is practiced in Malaysia’s Financial Education Network, Indonesia’s National Board of Financial Inclusion and the Philippines’ Financial Inclusion Steering Committee.

Indeed, achieving financial inclusion is a shared responsibility and the extensive challenges could not be addressed by one institution.

- **Synergy.** Synergy goes beyond collaboration with its wide-ranging impacts that tend to be sustained. An example is the APIX of the ASEAN Financial Innovation Network (AFIN), which was jointly established by the MAS, the ASEAN Bankers Association

and the IFC. The open platform is a sandbox that facilitates the collaboration of financial institutions and fintech firms in and outside Singapore.

- ***Customer-centric design.*** Different organizations on financial inclusion have reiterated that the needs of marginalized communities should be considered starting from the design of the financial service or product. The People’s Bank of China affirmed its motivation of enhancing financial inclusion by having several features of the e-CNY address the needs of the elderly and the physically disabled, including the blind.
- ***The “human touch.”*** The importance of personal interaction has been emphasized during the webinar. Digitalization does not mean losing the “human touch.”
  - *As part of a literacy program.* In the experience of the Women’s World Banking in promoting digital financial services with women factory workers in Bangladesh and Cambodia, using “ambassadors” or trustworthy persons as touchpoints for the literacy program proved effective. Similarly, SEWA’s approach of recruiting trainers from the communities and sending them back to cascade their learnings to members of their respective communities was successful and a sustainable model. Low levels of confidence to use digital financial services is mitigated with the hand-holding approach of these trainers and ambassadors.
  - *As part of the onboarding of customers.* GoTyme deviates from the usual “digital only” presence of digital banks by having kiosks in supermarkets with staff to help customers with their requirements and questions. The link with the supermarket chain is likewise an ingenious marketing scheme as it uses the supermarket’s presence in various provinces to introduce digital banking to consumers and businesses, essentially bringing digital banking to the people.
  - *As part of work with the client.* Fintech company Strands encourages its client banks to provide a personal touch in their dealings with customers to help address their concerns better.

### ***Recommendation***

Moving forward, the proposition is to enhance or extend the best practices mentioned above or, simply stated – to do more of what works.

- ***Attention to the marginalized***

One webinar speaker noted the tendency of financial service and product providers to focus their marketing efforts on easy targets – the millennials who are tech-savvy. As such, in a few years, this market may be over-served. Instead, the speaker suggested capturing a different customer base, such as the elderly and low-income segments.

Consider these segments not only during the marketing phase but starting on the conception or design phase of the product so that their specific needs and requirements would be addressed and appropriately incorporated into the features of the service or product.

- ***Greater and broader collaborations and dialogues***

Collaborations and consultations are appropriate if the scope of the problem at hand involves several concerns.

- Coordination with other government agencies

For digital financial inclusion, certain topics such as data privacy and market competition are being brought to the fore. Including pertinent government agencies in the conversation would facilitate coordination on these matters.

- Dialogue with women and other marginalized segments of the population

Following the above discussions, public authorities and fintech firms should have a dialogue with—and hear the voice of—the marginalized groups to incorporate the specific needs and requirements of women and other marginalized people.

Dialogues are best continued throughout the lifecycle of the products and services. The feedback from these customers would help assess the usefulness, suitability and effectiveness of the services and products. Moreover, a platform for complaints and their proper resolution could be established through the coordination of the public authorities with the service and product providers.

- Collaboration of public authorities with telecommunication companies

One obstacle mentioned in the session on marginalized segments of the population was the limited access to devices or smartphones. One device per family may constrain the use of digital financial services if the phone is with the husband, for example, and the wife needs to do certain transactions. This problem could be addressed with a program that would provide smartphones at low cost or with low-interest rate loans.

- ***With an eye on emerging issues***

One speaker noted emerging digital payments trends, one of which is using devices and tools that help mitigate the impacts of climate change (for example, solar energy or solar water pumps). The demand for these devices would be a new motivation for digital financial inclusion.

Regulators and financial service and product providers may also consider a more deliberate approach in tackling outstanding issues concerning new digital finance models. For example, the webinar discussed the potential of alternative data and models for onboarding the unbanked to the formal financial system. However, there are challenging details such as algorithm bias, model reliability, interpretability, and transparency that would require careful deliberations.

Public authorities and private sector players in APEC can benefit from peer learning and knowledge sharing in terms of implementing industry sandboxes and developing regulatory frameworks that will address emerging issues arising from digital finance innovations.

### ***Moving forward by going back to the fundamentals***

With the considerable increase in account ownership indicated in the 2021 Global Findex Database (Demirgüç-Kunt *et al.* 2022), the common question is “how do we get to the last mile?”

The CGAP report by Chalwe-Mulenga *et al.* (2022) may provide some direction. The report noted the rise of consumer risks from using digital financial services, with some risks growing faster than the adoption of those digital financial services. The public uses these services primarily because of convenience and with the assurance that their money is safe. For the unbanked and underserved, resistance hinges on the concern about the safety of their hard-earned money. Moreover, the impacts of incidents involving fraud and cybersecurity usually go beyond the victims or those directly involved. Fear and distrust tend to have ripple effect on the public. Therefore, the occurrences of such incidents would not just deter progressing to the last mile but would even cause a setback.

The digital financial ecosystem thrives on trust. Therefore, it is the collective and shared responsibility of the public authorities, financial products and services providers and fintech firms to manage the risks by putting in place appropriate security in the technology and constant vigilance in the policies.

Trust could also be established and sustained with greater understanding and appreciation of the digital financial products and services. The rapid advance in technology and innovation should be matched with increased trainings, learning workshops and information campaigns for enhanced digital familiarity and skills, and financial literacy.

More robust digital infrastructure that include internet connectivity and digital identification could encourage digital financial transactions.

Essentially, further progress in digital financial inclusion would require concerted actions from the various stakeholders—regulators, financial institutions, fintech firms and consumer groups—to reinforce the fundamentals. They could also improve existing policies and measures with adjustments that take into account the latest innovations in the digital finance sphere. Indeed, digital financial inclusion is an ongoing, collaborative and evolving undertaking.

# Annex 1: APEC Webinar Program

## APEC Webinar on Strategies and Initiatives on Digital Financial Inclusion: Lessons from Experiences of APEC Economies

25-27 July 2022

All times in Philippine Standard Time (UTC/GMT+8)

### MONDAY, 25 JULY 2022

#### 09:00 – 09:05 AM OPENING REMARKS

Director-General, Fiscal Policy Office, Ministry of Finance, Thailand

#### 09:05 – 10:35 AM STATE OF DIGITAL FINANCIAL INCLUSION – OVERVIEW

Senior Operations Officer, Financial Institutions Group Asia Pacific International Finance Corporation

Team leader, Fintech Development and Innovation Center  
Financial Supervisory Commission, Chinese Taipei

Manager, Information Technology Department, Bank of Papua New Guinea

Deputy Director, Financial Inclusion Department, Bank Negara Malaysia

#### **Moderator:**

Head of Policy Analysis and Guidance, Alliance for Financial Inclusion

#### 10:45AM–12:15PM STATE OF DIGITAL FINANCIAL INCLUSION CONSUMER ISSUES

Senior Coordinator, Self-Employed Women's Association (SEWA), India

Director, Women's World Banking

Director, Office of the United Nations Secretary-General's  
Special Advocate for Inclusive Finance for Development

Senior Advisor, Ant Group

Senior Financial Sector Specialist  
Consultative Group to Assist the Poor (CGAP)

#### **Moderator:**

Senior Digital Payments Expert  
Better Than Cash Alliance

### TUESDAY, 26 JULY 2022

#### 08:30 – 10:00 AM THE PREVALENCE OF FINTECH – BENEFITS AND RISKS

Head, Customer Presales, Project Management Advisor and Trainer, Strands

Founder and Chief Executive Officer  
Banco Platform, RABC Group

President and Co-Chief Executive Officer, GoTyme

#### **Moderator:**

Chief Executive Officer-SME Finance Forum  
Chief Operations Officer –International Finance Corporation

#### 10:15 – 11:45 AM THE PREVALENCE OF FINTECH – INNOVATIONS

Chief Product Officer, UBX Philippines

Chief Strategy Officer and Managing Director, CredoLab

Director, Innovation Division, Digital Currency Institute  
People's Bank of China

#### **Moderator:**

External Consultant  
Bank for International Settlements Innovation Hub

### WEDNESDAY, 27 JULY 2022

#### 01:00 – 02:30 PM DIGITAL FINANCIAL INCLUSION POLICIES THAT WORK – IN FOCUS

Group Chief Operating Officer, SORAMITSU Group

Senior Researcher, SINUS Markt- und Sozialforschung  
Advisor to SORAMITSU

Director, Payment System Department, National Bank of Cambodia

Deputy Director, Payment System Oversight Department  
Bangko Sentral ng Pilipinas

General Manager, Department of Payment and Settlement Systems  
Reserve Bank of India

#### **Moderator:**

Deputy Director, Fintech and Innovation Group  
Monetary Authority of Singapore

#### 02:45 – 04:15 PM DIGITAL FINANCIAL INCLUSION POLICIES THAT WORK – SYNERGY

Director, SME Development and Financial Inclusion Group  
Bank Indonesia

Policy Analyst, OECD FinCoNet

Research Director, Center for Financial Inclusion at Accion

#### **Moderator:**

Senior Consulting Economist and Advisor to the Dean  
Asian Development Bank Institute

#### 04: 20 – 04:25 PM CLOSING REMARKS

Governor  
Bangko Sentral ng Pilipinas



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