Cambridge
**Centre
for Alternative
Finance**

UNIVERSITY OF
CAMBRIDGE
Judge Business School

FinTech Regulation in
ASIA PACIFIC (APAC)

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The growth and adoption of FinTech and related activities presents many challenges, alongside opportunities, for regulators in emerging and developing economies. If a balance can be struck between promoting innovation while protecting consumers, these financial innovations can help regulators achieve their objectives, particularly financial inclusion. Across APAC (Asia Pacific), there has been much variety in the regulatory response to the proliferation of the FinTech market, particularly in the introduction of regulatory frameworks and the development of innovation initiatives. Analysis of topical data regarding this regulatory response, as undertaken in this report, allows for regional regulatory benchmarking and knowledge sharing which is relevant to regulators and policy makers alongside the wide range of participants in the wider FinTech ecosystem.

The FinTech Regulation in APAC report highlights how a number of key FinTech verticals are regulated across the region. This involves identifying which regulators have a mandate for specific FinTech verticals, and whether these verticals are regulated under general or bespoke frameworks. There is also analysis on cross-sector verticals which affect the development of FinTech as a whole, with a focus on cybersecurity, data protection, consumer protection and eKYC.

The development of regulatory innovation initiatives is also captured, highlighting which regulators have or are planning to introduce initiatives such as innovation offices, regulatory sandboxes and SupTech applications.

The study is based on based also on a qualitative review of regulatory frameworks, including the laws, regulations, directives, and guidelines relating to FinTech activities. It also draws on data from the Global COVID-19 FinTech Regulatory Rapid Assessment Study (CCAF and World Bank, 2020) and Regulating Alternative Finance (CCAF and World Bank, 2019). It is the third in a series of three regional FinTech regulation landscaping studies that include Sub-Saharan Africa (SSA) and the Middle East and North Africa (MENA) regions. By comparing approaches across jurisdictions within APAC and other Regions, the study is able to provide a holistic picture and shed new light on the dynamic and evolving landscape of FinTech regulation.

Finally, we would like to thank the regulators who contributed their time and expertise to provide us with case studies for this report. We also remain grateful for the foundational funding provided by the UK Foreign, Commonwealth & Development Office (FCDO) through the Prosperity Fund Global Finance Programme to support this research. We are also grateful for additional financial support that has been provided by Invesco, and the Asian Development Bank Institute (ADBI).

Robert Wardrop
Management Practice Professor of Finance
Director & Co-founder of the Cambridge Centre for Alternative Finance (CCAF)
University of Cambridge Judge Business School

The UK Foreign, Commonwealth and Development Office (FCDO) is delighted to partner with the Cambridge Centre for Alternative Finance (CCAF) on this report, analysing the regulatory approach to financial technologies (FinTech) in the Asia Pacific (APAC) region.

FinTech is helping regulators widen access to financial services for their citizens. We strongly welcome the development of regulation in APAC which balances innovation to encourage financial inclusion with robust consumer protection.

The *FinTech Regulation in the Asia Pacific Region* report provides a timely and relevant overview of how financial regulators and policy makers are responding to the development and growth of FinTech within the region. This research aligns with UK efforts to facilitate increased economic resilience and innovation. The APAC region is home to two of our FinTech Bridges, as well as a new Digital Economy Agreement with Singapore to encourage closer regulatory FinTech alignment.

This report comes against the backdrop of the COVID-19 pandemic. Regulatory responses to the COVID-19 pandemic have varied, with the introduction of temporary relief measures alongside an enhanced focus on initiatives such as remote on-boarding and digital payments. By comparing experiences across jurisdictions, this report sheds light on the dynamic and evolving landscape of FinTech regulation and provides important evidence and insights.

I hope this report brings greater understanding and enables further work by regulators to use the potential of financial innovation and technology to serve the best interests of their consumers.

Moazzam Malik CMG
Director General Africa
Foreign, Commonwealth and Development Office

Invesco

Invesco continues to support our partners at the Cambridge Center for Alternative Finance because of the caliber, consistency, and cadence of research being published through their organization. The latest report entitled "FinTech regulation in Asia Pacific (APAC)" comes at a critical moment in time. We believe that regulatory positioning is one of the most uncertain yet influential factors as we press forward in our pursuit of disruptive distribution client experiences and digital assets globally and specifically in the APAC region. The complexity of the regional and cultural nuances of the APAC region are even more reason we look to our partners at Cambridge for insight because understanding cross-border regulatory regimes and frameworks informs potential opportunities, threats, and the pace at which we can move in the traditional financial services space.

Continuous monitoring of how alternative finance verticals are being adopted across the APAC region provides indications of how participant behaviors and attitudes towards certain experiences in the financial services sector are changing and can inform how we approach the engineering of our own experiences as applied to the traditional finance world as universes of alternative finance, fintech, and traditional finance continue to converge.

Several observations from this report jump off the page as we look to strengthen our presence in region following success of Invesco's endeavors in the fintech space and joint ventures we've undertaken. Specifically, we're encouraged by statistics that show broad regulatory coverage in cybersecurity and financial consumer protection. Similarly, other areas that align to our own goals and require more in-depth regional analysis from our own teams include the statistics around e-KYC and open banking.

While Invesco does not operate in every jurisdiction included in the survey, we see promising growth opportunities in countries where we do operate. The increased activity across all jurisdictions in innovation offices and regulatory sandboxes is also encouraging as we look to regulatory agencies in region to partner with entities across the financial services value chain, conduct proof of concept and feasibility testing, and report out on findings and consequently codify evolutions in regulatory frameworks and legislation.

As technology races forward, it can be easy to get lost in noise and hyped trends. Additionally, while technology has the capacity to blur and breakdown borders, regulation reinforces them. Invesco endeavors to be a world-class, client-centric asset manager, and as such, we see a dichotomy between unbridled innovation and technological advancement versus the protection of rights for sovereign nations and individual participants, so it's critical to stay abreast of emerging trends across the fintech space and the corresponding regulatory landscapes to see how they grow and change over time.

Dave Dowsett
Global Head of Technology Strategy and Innovation
Invesco

The new generation of financial technology (FinTech) shows great promise to promote financial inclusion and the efficient delivery of financial services, but also can create new risks and unintended consequences, both for the financial sector and for users. Financial regulators face great challenges in determining the appropriate balance between supporting financial innovation and preserving financial stability, ensuring consumer protection, and maintaining standards for anti-money laundering, terrorism financing and know-your-customer processes.

Development of alternative payment and financing systems could undermine the stability of legacy financial institutions. Use of crypto assets involves risks related to crypto asset exchanges, illicit financial flows and possible tax evasion. Alternative finance involves risks related to maturity mismatches; information asymmetries; and the insufficient analytical capacities of banks and other investors. Crime-related risks associated with the use of Fintech include stealing sensitive consumer and corporate financial data through hacking, phishing or other fraudulent means, and theft of online financial assets. International cooperation will be needed to address these risks and promote development of FinTech that is compatible with financial stability and consumer protection.

Indeed, financial regulators are hard-pressed simply to keep up with innovations in the sector and to understand their implications. The COVID-19 pandemic has accelerated the demand for FinTech services, but at the same time has heightened risks such as cyber security and various kinds of consumer fraud.

The FinTech sector in Asia-Pacific (APAC) is diverse, dynamic and multi-faceted. On the whole, regulators in the region have taken a positive approach toward promoting development of the sector. Market conditions vary widely across the region in terms of economic and financial development, so it is not surprising that regulators have taken diverse approaches to FinTech.

This timely report provides a detailed and comprehensive view of regulation of FinTech in the APAC region. As such, it should become a valuable reference for identifying best practices and understanding the motivations for taking varied approaches under different conditions. It should benefit regulators, business practitioners and scholars in this field. ADBI is delighted to have supported this project.

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Research Team

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Acronyms

ACL	Australian Credit Licence
ACSC	Australian Cyber Security Centre
ADBI	Asian Development Bank Institute
AFI	Alliance for Financial Inclusion
AFIN	ASEAN Financial Innovation Network
AFSL	Australian Financial Service Licence
AFTECH	Indonesian FinTech Association
AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
APAC	Asia-Pacific
ASEAN	Association of Southeast Asian Nations
ASIC	Australian Securities and Investments Commission
B2B	Business-to-Business
BI	Bank of Indonesia
BOT	Bank of Thailand
BCP	Business Continuity Planning
BSP	Central Bank of the Philippines
CAC	Cyberspace Administration of China
CCAF	Cambridge Centre for Alternative Finance
CDD	Customer Due Diligence
CFL	Centres for Financial Literacy
COVID-19	Coronavirus Disease 2019
CSA	Singapore Cybersecurity Agency
DFS	Digital Financial Services
DI	Digital Identity
ECF	Equity Crowdfunding
e-KYC	Electronic-Know Your Customer
FATF	Financial Action Task Force
FCP	Financial Consumer Protection
FIU	Financial Intelligence Unit
HKMA	Hong Kong Monetary Authority
GFIN	Global Financial Innovation Network
IFSB	Islamic Financial Services Board
MAS	Monetary Authority of Singapore
MENA	Middle East and North Africa
ML/TF	Money Laundering/Terrorist Finance
OJK	Indonesia Financial Services Authority
P2P	Peer-to-Peer
PBOC	People’s Bank of China
PIRI	Pacific Islands Regional Initiatives
SPI	Indonesian Payment Gateway System
SSA	Sub-Saharan Africa
TF	Terrorist Financing
UIDAI	Unique Identification Authority of India
UPI	Unified Payments Interface
UNSGSA	UN Secretary-General's Special Advocate for Inclusive Finance for Development

Glossary

Agent(s): a third party acting on behalf of a financial service provider to deal with customers.

Cybersecurity: the practice of defending electronic infrastructure and networks, as well as data, from malicious attacks.

Digital payments: the transfer of value from one payment account to another using a digital device such as a mobile phone or computer. This may include payments made by traditional financial institutions and FinTechs via bank transfers, e-Money and payment cards.

Data protection: laws and/or regulations designed to protect people's personal data.

Digital financial services (DFS): financial products and services, including payments, transfers, savings, credit, insurance, securities, financial planning and account statements, delivered via digital/electronic technology, that can incorporate traditional financial service providers.

Digital infrastructure: the enabling digital structures, facilities, ecosystem and capabilities surrounding the provision of FinTech/DFS, but can be widely applicable beyond financial services. For this study, this typically includes infrastructure related to identity (for example digital identity initiatives), data analytics and sharing, credit information and/or payment systems, and risk mitigations. While these may be directly or indirectly relevant for the regulation and supervision of FinTech/DFS, not all of these may be under the remit or influence of financial regulators.

e-Money: encompasses the issuance of electronic funds and the provision of digital means of payment to access these funds. It includes mobile money, which entails the use of a mobile phone to transfer funds between banks or accounts, deposit or withdraw funds, or pay bills.

FinTech: encompasses advances in technology and changes in business models that have the potential to transform the provision of financial services through the development of innovative instruments, channels and systems. For this study, FinTech refers to a set of activities (which may be either regulated or unregulated, according to each jurisdiction) contributing to the provision of financial products and services facilitated predominately by entities emerging from outside the traditional financial system.

FinTech market: the provision, transaction and facilitation of financial activities across emerging verticals, including digital lending (for example peer-to-peer (P2P) lending), digital capital raising (for example equity-based crowdfunding), digital banking, digital savings, digital payments and remittances, digital custody, InsurTech, WealthTech, cryptoasset exchanges and the supply of enterprise technologies, RegTech, alternative data analytics, and other services.

Innovation office: a dedicated office within a regulator that engages with and provides regulatory clarification to innovative financial services providers. These may also be known as innovation or FinTech hubs.

Open banking: Open Banking can be defined as a collaborative financial technology programme that is aimed at creating a standard for data sharing protocols that give customers and third parties easy digital access to financial data. This often takes place through the use of application programming interfaces (APIs).

RegTech/SupTech: for this study, SupTech refers to the use of innovative technologies by regulators to tackle regulatory or supervisory challenges. It is a subset of RegTech, which includes any use of technology to match structured and unstructured data to information taxonomies or decision rules that are meaningful to both regulators and the regulated entities, to automate compliance or oversight processes. The two terms are used interchangeably in this study given their varying usage by regulators, and the potential for commonly adopted definitions, standards and protocols.

Regulatory framework: for this study, this is an umbrella term that includes laws, regulations, directives, guidelines, recommendations and procedures that are issued by legislators and regulators. These could be standalone or contained within a wider regulatory framework.

Regulatory innovation initiatives: a broad set of activities carried out by regulators to innovate regulatory and supervisory functions, processes, organisations, and applications, which often, but not necessarily, involve the use of technological solutions.

Regulatory sandbox: formal regulatory programmes within a regulatory agency that allow market participants to test new financial services or models with live customers, subject to certain safeguards and oversight.

Executive summary

The FinTech sector in Asia-Pacific (APAC) is diverse, rapidly growing and complex. On aggregate, the region has witnessed growth in FinTech, with P2P lending emerging as the leading FinTech vertical in the region while the prominence of digital payment platforms in the region remains unchanged. Digital payments play a pivotal role in e-commerce by facilitating the receipt of payments and storing of electronic value for buyers and sellers. At the same time, COVID-19 and other challenges created by the pandemic have caused recent contractions in some FinTech verticals. A notable challenge is presented by identity verification, which creates barriers in customer due diligence processes. Although there are jurisdictions that have made progress by introducing digital ID systems, in others the absence of a national ID system is an obstacle to the implementation of eKYC.

This study reviews how regulators in APAC have responded to the opportunities and challenges associated with FinTech and DFS through regulatory efforts and processes, as well as innovation initiatives. It forms part of a series of three studies reviewing the regional FinTech regulatory landscape in Sub-Saharan Africa (SSA) (CCAF, 2021a) and the Middle East and North Africa (MENA) (CCAF, 2022). By comparing the regulatory approaches across jurisdictions in APAC and other regions, this study seeks to shed light on the dynamic and evolving landscape of FinTech regulation as well as provide evidence and insights to inform policymaking and industry development.

This study also draws on data from two surveys issued to a select number of regulators: *Global COVID-19 FinTech Regulatory Rapid Assessment Study* (CCAF and World Bank, 2020) and *Regulating Alternative Finance* (CCAF and World Bank, 2019). It also encompasses a qualitative review of regulatory frameworks[1] relating to FinTech activities in 20 sampled jurisdictions across APAC. The FinTech verticals of specific interest in this study are digital payments, e-Money, international remittances, peer-to-peer (P2P) lending and equity crowdfunding (ECF). Also examined are cross-sectoral regulatory frameworks that affect the financial sector, such as data protection, cybersecurity, anti-money laundering, consumer protection, open banking and electronic-know your customer (e-KYC). The study also maps current regulatory innovation initiatives, such as regulatory innovation offices and regulatory sandboxes, and the adoption of RegTech/SupTech solutions by regulators. Finally, two detailed case studies are presented on regulatory approaches to FinTech that have been adopted by India and Indonesia.

The study finds that regulators in APAC have taken active measures to advance the regulation of FinTech both in terms of approaches and initiatives. However, there are key areas still to address including gaps in terms of missing frameworks in FinTech verticals, such as P2P lending and in cross-cutting areas, such as e-KYC. The results further suggest that regulatory responses to FinTech have been catalysed by the COVID-19 pandemic.

Impact of COVID-19 on FinTech regulation in APAC

The COVID-19 pandemic has accelerated the adoption of FinTech and increased the regulatory priority of the sector. Regulators in APAC acknowledge FinTech’s ability to support their regulatory objectives. For example, most regulators view FinTech as having the potential to support financial inclusion (75% versus 70% globally), the adoption of DFS (70% versus 53% globally) and consumer protection (60% versus 38% globally). In terms of the pandemic, 85% of APAC regulators stated there was a high degree of resilience and

1 Regulatory frameworks include laws, regulations, directives, guidelines and other regulatory information.

adaptability within their organisations in reacting to the crisis, with more APAC regulators feeling there was greater adequacy of resources available to respond (72%) than regulators in MENA (55%) or SSA (35%).

APAC regulators considered that the COVID-19 pandemic has increased risks related to FinTech in terms of cybersecurity (82%), operational risks (71%) and consumer protection (47%). Regulatory measures undertaken by APAC regulators in response to COVID-19 were mainly related to ensuring economic relief (50%), cybersecurity (50%), customer onboarding and due diligence (44%), and business continuity (44%). In terms of specific FinTech verticals, 42% of APAC regulators who responded to this survey introduced measures for digital payments and remittances, in comparison to 61% globally; 17% (versus 15% globally) introduced measures for digital capital raising.

FinTech-specific regulatory frameworks

The study indicates that the payments, e-Money and remittances sectors have the widest coverage in APAC in terms of existing regulatory frameworks. On the other hand, there are significant gaps with respect to P2P lending and ECF. **90% of sampled jurisdictions in APAC have established regulatory frameworks for digital payments.** In those jurisdictions with a framework, 55% regulate the wider payments sector through a general regulatory framework, while 35% employ a specific digital payments framework. Some regulators in sampled APAC jurisdictions have streamlined existing payment regulations to ensure they stay abreast of new developments in the payments sector. This is in addition to integrating payment service providers in a single activity-based regulation. Activity-based regulation entails applying rules for a specific activity uniformly, regardless of the type of entity undertaking the specified activity.[2]

90% of sampled jurisdictions in APAC have established a regulatory framework for e-Money. Of these, 55% regulate the e-Money sector using a general payments framework that contains explicit provisions that are applicable to e-Money, while 30% employ a specific e-Money framework and 5% regulate it under another framework. The majority of sampled APAC jurisdictions allow agents to operate in the e-Money sector, and this has contributed to DFS expansion, and in turn, increased digital financial inclusion.

85% of sampled APAC jurisdictions have a regulatory framework for international remittances in place, 5% have one under development and 5% treat it as unregulated or self-regulated. In those jurisdictions with existing frameworks, 55% include international remittances within a general payments framework, 25% have a specific remittances framework and 10% regulate it through other frameworks.

50% of sampled jurisdictions in APAC have a bespoke framework that regulates P2P lending and 6% plan to introduce one. 22% of jurisdictions have prohibited P2P lending, while 22% treat it as unregulated or self-regulated. The establishment of bespoke regulatory frameworks for P2P lending activities is similar to the approach in MENA, where 50% of sampled jurisdictions have bespoke frameworks. This differs significantly from SSA, where only 11% of the jurisdictions sampled utilise a bespoke regulatory framework.

78% of sampled APAC jurisdictions have an equity crowdfunding framework, with 50% having a bespoke framework and 28% regulating under an existing framework. This is higher than the sampled MENA (50%) and SSA (34%) jurisdictions. 11% of jurisdictions prohibit this activity.

2 Activity based regulation entails applying rules for specific activity uniformly, regardless of the type of entity undertaking the specified activity.

Cross-sector regulatory frameworks that impact FinTech

In the cross-sectoral verticals considered, the regulatory frameworks are most common in the AML and data protection verticals, with nearly complete coverage across the sample. In contrast, e-KYC had the greatest instance of missing regulatory frameworks. **65% of sampled APAC jurisdictions have a broad framework for data protection in place, 20% plan to adopt one and 15% have no framework.** In terms of specific data protection frameworks for financial services, it is notable that 90% of sampled jurisdictions have a framework in place.

95% of sampled jurisdictions in APAC have a broad regulatory framework for cybersecurity in place and the remaining 5% plan to introduce one. Since the start of the pandemic, 75% of sampled jurisdictions have reported introducing additional measures relating to cybersecurity, mainly focused on raising awareness of ongoing cybersecurity threats.

35% of jurisdictions in the APAC sample have regulatory frameworks in place for open banking and 35% plan to introduce one. There are indications that these low levels of adoption could be related to the amount of economic inequality within the region. According to the World Bank Income Group classification, all but two of the existing open banking frameworks in the sample are in high income jurisdictions.

79% of jurisdictions in the APAC sample have a framework in place for financial consumer protection (FCP), 5% plan to introduce one and 16% utilise general consumer protection frameworks for FCP. 61% of surveyed jurisdictions introduced additional consumer protection measures in response to the COVID-19 pandemic.

All jurisdictions in the APAC sample have a framework in place for anti-money laundering (AML) and combatting the financing of terrorism (CFT), except Bhutan, which is planning to introduce one legal framework for AML/CFT.

66% of jurisdictions in the APAC sample have some type of e-KYC frameworks in place. In those jurisdictions with a framework, 22% are e-KYC specific and 44% are general KYC frameworks that enable e-KYC. 21% of jurisdictions plan to introduce an e-KYC framework, and 17% expressly forbid e-KYC. FinTechs in APAC reported an urgent need for e-KYC (33%) and remote onboarding (30%) regulatory support, highlighting key demands from market participants.

Regulatory innovation initiatives

Across the region, prevalence of regulatory innovation initiatives is increasing rapidly. All APAC jurisdictions were reviewed regarding their regulatory innovation initiatives, including innovation offices, regulatory sandboxes and RegTech/SupTech efforts. The study revealed a significant increase in activity over the last two years:

- **16 jurisdictions with at least one innovation office were identified across the region** (with a further one planned); an increase from nine in 2019.
- **25 jurisdictions with at least one regulatory sandbox were identified** (with a further four jurisdictions planned); an increase from 13 in 2019. Regulatory sandboxes are the most common initiative across the sampled jurisdictions
- **15 jurisdictions with at least one active RegTech/SupTech initiative were identified** (with a further two planned); an increase from eight in 2019.

COVID-19 appears to have had a positive impact on the increasing prevalence of regulatory innovation initiatives.

Hurdles faced by regulators when establishing regulatory frameworks and innovation initiatives

APAC regulators reported several hurdles to effective supervision that may explain the variation in prevalence of regulatory frameworks. The main obstacles reported in forming regulatory frameworks included limited technical expertise (86%), coordinating activities with multiple regulators (79%), lack of clarity on jurisdiction over an activity (71%) and limited funding/resources (64%).

The COVID-19 pandemic has exacerbated existing challenges in regulating FinTech and introduced new ones. Of the surveyed regulators, 60% reported challenges in accessing timely data, in comparison to 29% globally. They also reported that COVID-19 made it more challenging to coordinate with other domestic agencies (33% versus 39% globally) and to perform their core functions while working remotely (33% versus 49% globally).

Country case studies:

Two detailed case studies were conducted on the regulatory approaches to FinTech that have been adopted by India and Indonesia. The case studies provide insights on FinTech market development, the applications of regulatory frameworks and the challenges in creating an enabling FinTech ecosystem for jurisdictions in APAC and beyond.

India

India is one of the fastest-growing FinTech markets in the world. Its regulatory approach involves creating an enabling environment for the growth of digital innovation by establishing the basic infrastructural entities that provided the rails on which innovative products can run. India’s regulation strategy also involves encouraging wider participation by extending its scope to non-banks and increasing interoperability. There are several examples of positive practices in this jurisdiction. For example, in contrast to most other jurisdictions in the APAC sample, India has a bespoke framework that enables P2P lending activities. Its regulatory approach to digital infrastructure is also notable: its 'India Stack' is one of the most renowned examples in this regard. Regulators in India still face several key challenges including those related to fragmentation in the regulatory approach, and there are gaps in the digital lending regulatory framework.

Indonesia

Indonesia is adapting its regulatory environment to enable financial innovation. The regulatory authorities have appointed a FinTech Association to represent digital financial innovation firms and support efforts to create business-friendly regulations for the FinTech industry. The broad mandate conferred to regulators has enabled regulatory reform that encourages the development of the FinTech sector, especially in terms of mobile wallets and payments. Indonesia’s commitment to creating an enabling FinTech environment was highlighted in the Digital Finance Innovation Roadmap, launched in 2018. The roadmap supported a ‘light touch and safe harbour’ approach to accelerate innovation, and enable investors and service operators to implement joint experiments in a controlled manner. The Indonesia Financial Services Authority (OJK) also launched an innovation centre, OJK Infinity, to facilitate a regulatory sandbox for balancing innovation and consumer protection, and to create an innovation hub and a FinTech education hub to support the growth of the digital finance industry while providing consumer protection. Regulators in Indonesia are facing several key challenges including inadequate infrastructure to support e-KYC, shortage of the talent needed to accelerate the digital economy.

2. Introduction

2. Introduction

APAC, with its collective population of over four billion people, has witnessed the growth of FinTech in many of its jurisdictions. Regulating FinTech in a region as diverse as APAC has led to distinct regulatory approaches and objectives to accommodate the diverse geographies, cultures, demographic specificities and varying levels of access to finance.

Technology is not only transforming the provision of traditional financial products and services, but also facilitating the creation of alternative financial products by entities emerging from outside the financial system. This study identifies existing regulatory frameworks for specific FinTech verticals – digital payments, e-Money, international remittances, digital lending and equity crowdfunding – in a representative sample of APAC jurisdictions. An overview of the regulatory approach implemented for each specific vertical can be found in **Chapter 4**.

Growth in digital payments and e-Money has led many APAC jurisdictions to design specific regulatory frameworks for these verticals, such as India's Payment and Settlement Systems Act, 2007, and Hong Kong's Payment Systems and Stored Value Facilities Ordinance (Osborne Clarke, 2018). International remittances play a vital role in APAC; it was the largest remittance-receiving region globally, with $325 billion in formal remittances instructed (45% of global flows) in 2019 (ADB, 2021). Digital lending was significant in emerging economies, with domestic players and homegrown platforms making up almost 80% of regional volumes in 2019 and 2020 (CCAF, 2021a).

Many authorities regard FinTech as a relevant tool in supporting efforts for financial inclusion and economic growth (World Bank, 2020a). Regulations across APAC are at various stages of development in terms of creating an enabling regulatory environment to promote financial inclusion. In addition, many authorities are still formulating their approach on how to balance promoting innovation and managing emerging risks (CCAF, ADBI and FinTechSpace, 2019). Some regulators have introduced bespoke regulations for specific FinTech verticals, while others regulate FinTech through existing frameworks. The aim is to encourage innovation while ensuring that consumer protection and market stability are not compromised.

Regulators' strategies toward FinTech vary across APAC jurisdictions, with approaches ranging from 'wait and see' to 'test and learn' and efforts to be an 'innovation facilitator' (CCAF, ADBI and FinTechSpace, 2019). One example of the 'test-and-learn' strategy is the Philippines' approach to e-Money. In the early 2000s, it allowed non-banks to offer financial services. Then, after observing the development of the market and incorporating the lessons learnt, the Philippines central bank passed the e-Money regulation (GSMA, 2009).

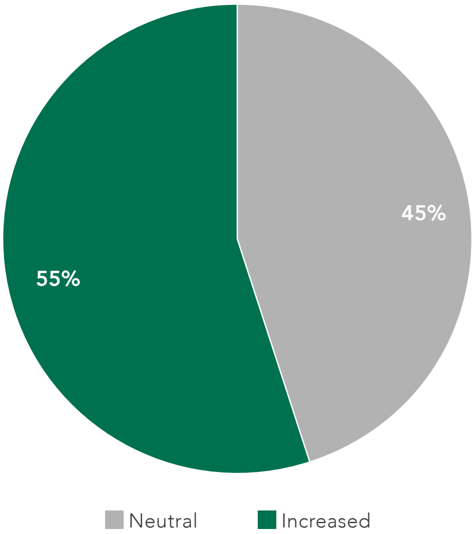
Other regulators acted as 'innovation facilitators' by providing structured environments to promote innovation and experimentation, including innovation hubs and offices, accelerators, and regulatory sandboxes (World Bank, 2020b). These regulatory innovation initiatives are mapped out in **Chapter 6**.

1.1.1 The impact of COVID-19: the regulatory perspective

While regulators globally have faced the challenges created by the COVID-19 pandemic, (CCAF and World Bank, 2020) regulators in APAC have also had to respond to the impact of the crisis. This study identifies a range of specific challenges and risks that the pandemic has introduced for regulators in APAC. It also maps regulator opinion on the importance of FinTech during the COVID-19 crisis.

The economic downturn during the pandemic and the challenges of economic recovery have created pressures in financial markets and for their regulators, as consumers shifted to DFS en masse. As a result, financial services have been classified as an essential service in some APAC jurisdictions (CCAF and World Bank, 2020). **Figure 2.1** indicates that most APAC regulators (55%) increased the priority of FinTech during the pandemic.

Figure 2.1: Regulator perception of FinTech priority in light of COVID-19 – APAC (N=11)



Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

FinTechs in APAC that responded to the *Global COVID-19 FinTech Market Rapid Assessment Study* reported an increase in transaction volume and number of transactions in both digital payments and digital capital raising from H1 2019 to H1 2020 (CCAF, WEF and World Bank, 2020).

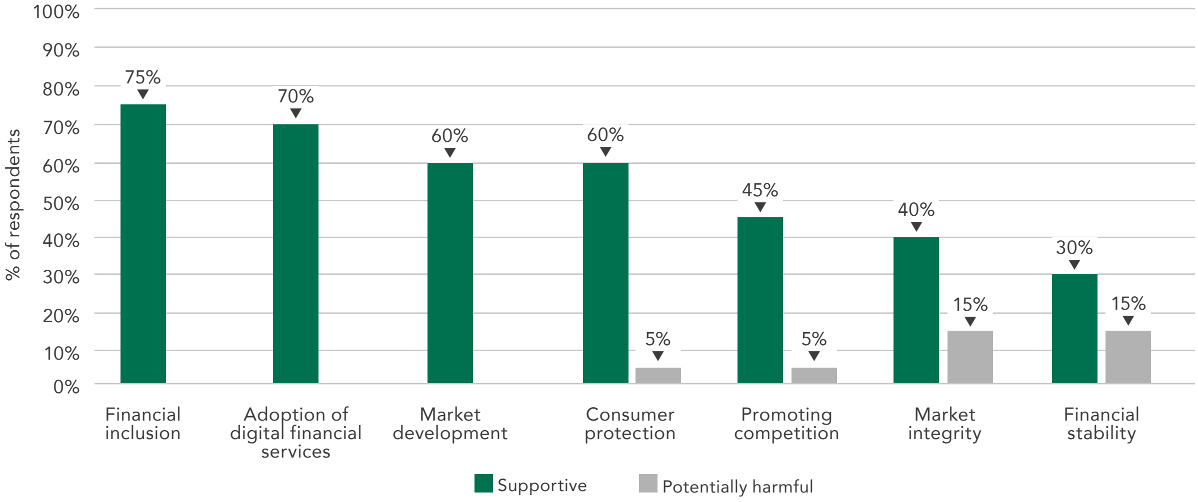
This growth, however, was the second-lowest compared to other regions. Digital lending was negatively affected, with transaction volume decreasing by 16% and the number of transactions by 17% (CCAF, WEF and World Bank, 2020).

In terms of alternative lending, there was a decrease of 7% during 2020 (Q1–Q4) in APAC and an even steeper decline for one of the largest alternative lending markets, China (CCAF, 2021a)[3]. There was growth, however, in other FinTech verticals: digital payments saw an increase of 4% in transaction volume and 6% in the number of transactions. In digital capital raising, transaction volume increased by 34% and the number of transactions by 39% (CCAF, WEF and World Bank, 2020). This growth indicates recovery from reductions in transactions volume that occurred during the first half of 2020.

In terms of achieving their regulatory goals during the COVID-19 pandemic, APAC regulators faced similar challenges to those faced by other regulators globally. **Figure 2.2** shows that APAC regulators generally perceived that FinTech supports financial inclusion goals (75%), adoption of digital financial services (70%), market development (60%), consumer protection (60%) and promotion of competition (45%). APAC regulators are more positive (60% compared to 38% globally) about the ability of FinTech to support consumer protection efforts (CCAF and World Bank, 2020).

3 In China the volume of alternative finance continued its dramatic decline from to $84.3 billion in 2019 to $1.2 billion in 2020, a drastic reduction from $358.3 billion in 2017 (CCAF, 2021a).

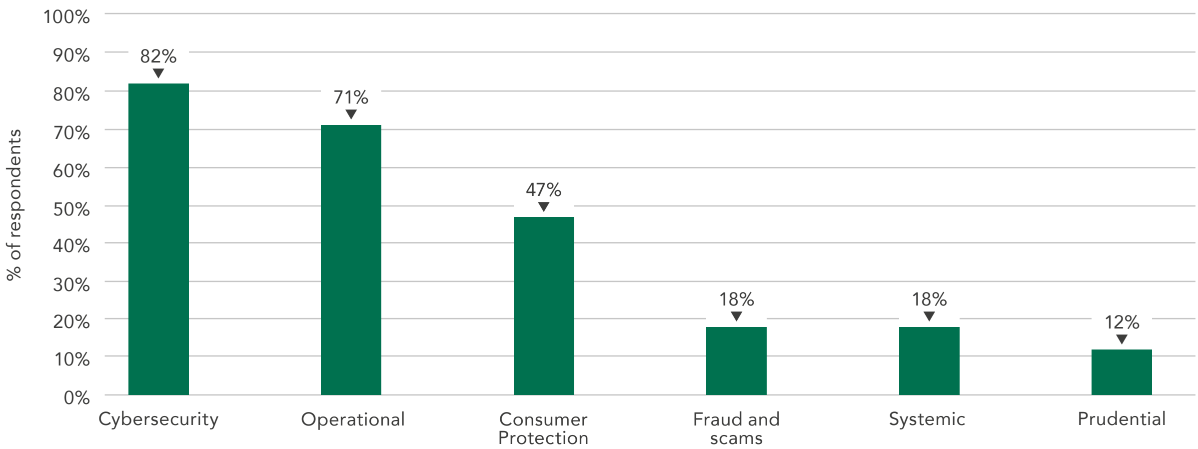
Figure 2.2: Perceived impact of FinTech on regulatory objectives in light of COVID-19 – APAC (N=20)



Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

However, APAC regulators also identified increasing risks in FinTech due to COVID-19. **Figure 2.2** shows that 15% of surveyed regulators anticipate potentially harmful effects on financial stability and market integrity. When directly asked about increasing risks, 82% of regulators who responded considered cybersecurity risks to have increased and 71% reported increased operational risks (as shown in **Figure 2.3**). The concerns of APAC regulators regarding cybersecurity and operational risks are generally shared by regulators globally. An in-depth evaluation of regulatory approaches to cybersecurity can be found in **Chapter 5**.

Figure 2.3: Regulator perceptions of COVID-19 increasing risks of FinTech – APAC (N=17)



Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

3. Literature review and methodology

3. Literature review and methodology

Methodology

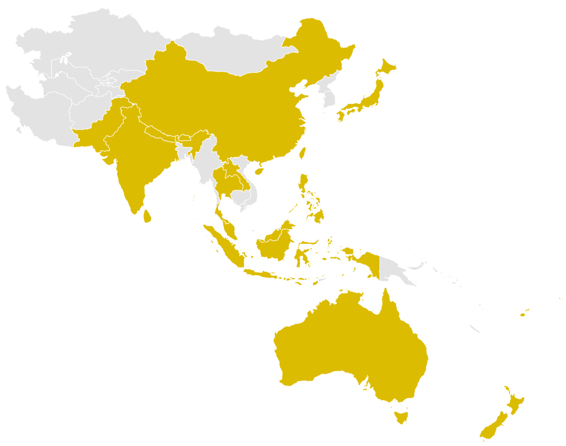
Sampled jurisdictions and data sources

This study builds on CCAF's prior research in APAC with other research partners.[4] It was designed and implemented to evaluate the current regulatory environment relating to FinTech in the region. A representative sample of jurisdictions across APAC was selected; the first criterion for inclusion was representation in previous CCAF regulatory innovation surveys so that data collected during this study could be merged with existing datasets. In particular, a jurisdiction was included in the sample if at least one of its regulators had responded to the 2020 *Global COVID-19 Regulatory Rapid Assessment* Study and the 2019 *Regulating Alternative Finance* Study (World Bank and CCAF, 2020; World Bank and CCAF, 2019). The purpose of those studies was to evaluate the impact of COVID-19 on the regulation of FinTech and regulatory innovation initiatives and understand the global regulatory landscape concerning alternative finance. This approach has enabled time-series observations as well as the ability to compare new data collected on regulatory frameworks with previous responses from regulators.

Twenty jurisdictions were identified from which at least one regulator had responded to both surveys. The chosen jurisdictions represent a diverse sample in terms of income, legal systems and geographic distribution.

The breakdown of sampled jurisdictions aligns with the United Nations sub-regions; APAC is separated into five Asian sub-regions and four Oceanian sub-regions. Our sample comprises six jurisdictions from South-East Asia, five from Southern Asia, four from Eastern Asia, both Australia and New Zealand, and one each from the Melanesia, Micronesia and Polynesia Oceania regional sub-groups. **Figure 3.1** illustrates the jurisdictions included in the data-collection exercise.[5]

Figure 3.1 Sampled APAC Jurisdictions



The sample comprises a range of income groups based on the World Bank's income classification, including lower middle income (seven), upper middle income (seven) and high income (six). The sample also comprises common law (seven), civil law (twelve) and mixed (one) legal system jurisdictions. APAC is represented in its entirety in the mapping of regulatory innovation initiatives using publicly available information, as described in **Chapter 6**.

This study also collected data through a primary desktop review of regulatory frameworks (laws, regulations, directives,

4 For past research on the region see (CCAF, 2016, CCAF, 2018b) and (CCAF, 2019).

5 The APAC jurisdictions selected for this study are: Australia, Bhutan, China, Fiji, Hong Kong China, India, Indonesia, Japan, Laos, Malaysia, Marshall Islands, Nepal, New Zealand, Pakistan, Philippines, Samoa, Singapore, Sri Lanka, Taiwan China and Thailand.

guidelines and other regulatory information). The findings from this desktop review were supplemented through bespoke surveys of regulators that addressed data ambiguities and gaps. The findings from the review and surveys were then consolidated into a single dataset. This dataset, and earlier regulatory surveys, were further supplemented with APAC-specific data gathered from the *Global COVID-19 FinTech Market Rapid Assessment Study* (CCAF, WEF and World Bank, 2020; CCAF, 2021b), to evaluate the challenges faced by the FinTech sector in APAC. Consequently, some of the insights are drawn directly from FinTech market participants and regulators' responses.

The methodology used in this report mirrors that utilised in the corresponding CCAF reports for SSA and MENA. This approach was used to allow for both intra- and cross-regional comparisons.

Selected FinTech sectors and cross-sectoral themes

The FinTech sectors included for analysis in this study are digital payments, e-Money (including mobile money), international remittances, P2P lending and ECF. The 2020 *Global COVID-19 Regulatory Rapid Assessment Study* (CCAF and World Bank, 2020) identified these sectors as growing in importance and/or sectors in which increased market activity had been observed in response to COVID-19. The digital payments and remittances sectors are key sectors; regulators reported both increased usage and offering of FinTech products and services. These sectors were also the ones into which they had most frequently introduced targeted regulatory measures.

The second criterion for inclusion was the availability of historical CCAF data regarding the regulatory approach to FinTech, to enable examination of the verticals. For the 2019 report, *Regulating Alternative Finance Survey* (CCAF and World Bank, 2019), data was collected on the regulatory approach to P2P lending and ECF, both globally and across APAC.

The cross-sectoral legal and regulatory frameworks included for analysis in this study are those of consumer protection, data protection, open banking, AML, e-KYC and cybersecurity. These frameworks were selected as the most important cross-cutting requirements of relevance to the FinTech sector. Cross-sectoral requirements affect FinTech development as they can limit the ability of FinTech to scale. As noted in the study, such cross-sectoral issues can impact regulatory aims and mandates, as well as FinTech and DFS more broadly.

Analytical approach

The datasets generated from past CCAF studies, together with the findings from the desk-based reviews and responses from the regulatory outreach exercise, were used to conduct an in-depth study of the regulatory approach to FinTech in the sampled jurisdictions across the selected FinTech verticals and cross-sectoral areas.

The datasets generated from the primary desktop review of regulatory frameworks were used in **Chapters 4, 5 and 6** to describe the regulatory environment in the selected verticals and cross-sectoral areas and map out the regulatory innovation initiatives. In **Chapter 7**, the datasets from previous CCAF studies were supplemented with other sources, including payments data from the IMF, World Bank and GSMA, together with other secondary literature. These were used to distil insights specific to APAC. In **Chapter 8**, the study indicates themes for possible future research in the region.

Due to the wide variability in regulator remits and responsibilities across specific regulatory themes, this study looks at individual jurisdictions and not individual regulators as the basic level of analysis. It must also be noted that the sample on occasion differs, since data used from previous studies refers to the number of regulators surveyed, whereas the research on frameworks refers to the number of jurisdictions. Instances where the sample differs are indicated throughout the study, together with their sources.

Literature review: the regulatory approach to FinTech in APAC

The FinTech landscape in APAC is rapidly evolving and the regulatory environment must evolve with it. The importance of the digital transformation of financial services and advancing financial inclusion is increasing on regulators' agendas. There is a variety of regulatory objectives in the sampled jurisdictions, necessitating a broad diversity in regulatory approaches.

In alternative lending activities such as P2P lending and ECF, emerging economies are leading the way in lending models in terms of market size and business activities, while advanced economies see more movement in equity and real-estate focused activities (CCAF, 2021a). In APAC, P2P lending was the leading FinTech sub-sector in both 2019 and 2020. Domestic players and homegrown platforms dominated the market, accounting for over 80% of regional volumes (CCAF, 2021a). In terms of investment, FinTech investment and deal activity in APAC experienced a rebound in the first half of 2021 after the COVID-19-related decline previously reported (CCAF, WEF and World Bank, 2020). According to a KPMG report, after dropping to $4.7 billion across 357 deals in H2 2020, H1 2021 saw $7.5 billion of investment across 467 deals in APAC (KPMG, 2021). Platform focus remains strong in APAC, with increasing investment in InsurTech, WealthTech and B2B services (KPMG, 2021).

There has been significant progress in terms of financial inclusion, although gaps still remain. In 2017, 65% of the population had a bank account with a financial institution; by 2021 this had increased to 71%. While FinTech growth in APAC has increased levels of financial inclusion, the use of FinTech is fragmented, highlighting disparities between income levels, gender and the urban-rural divide (Loukoianova et al., 2018).

Variation in regulatory approach

There is a variety of approaches to FinTech regulation across APAC, ranging from implementing bespoke regulations for specific FinTech business models to adopting a 'wait-and-see', 'test-and-learn' or 'innovation facilitators' strategy. Some jurisdictions adopt bespoke FinTech regulations to strike an appropriate balance between maintaining market stability and consumer protection, and encouraging innovation. Indonesia is one example of a jurisdiction that has introduced bespoke regulations for P2P lending (OJK Regulation No.77/POJK.01/2016; CCAF, 2019). Bespoke regulations have also been implemented in other FinTech sectors such as digital payments, as demonstrated by the Payment Systems (Regulation) Act 1998 (PSRA) by the Payment System Board (PSB) of Australia's Central Bank (ASEAN, 2020).

APAC regulators that have adopted a 'wait-and-see' approach monitor how the market develops before issuing any regulations. This is similar to China's initial approach in response to mobile payments. Mobile payments in China were unregulated at inception in 2013. However, as the market grew, regulatory changes, such as tightening access to payment licenses, were introduced. Recognising the need for stronger scrutiny, the People's Bank of China (PBOC) began regulating mobile payments on 30 June 2018 (World Bank, 2020b).

The regulators opting for a 'test-and-learn' approach are choosing the flexibility of making decisions on a case-by-case basis, enabling them to grant restricted licences for new entrants or established intermediaries when testing new innovative products. An example of this approach is the Philippines' response to e-Money in the early 2000s (World Bank, 2020b). The Bangko Sentral ng Pilipinas (BSP) stated that they would 'follow the market' by allowing non-banks to offer financial services through remittance agents and provide operators with a 'letter of no objection'. In 2009, after carefully observing the development of the market and incorporating lessons learnt from the past test period, the BSP issued e-Money regulations that were carefully tailored to the Philippines' market (GSMA, 2009).

The 'innovation facilitators' approach adopted by some regulators is defined as creating a structured framework environment to promote innovation and experimentation. The approach can include innovation hubs/offices, accelerators and regulatory sandboxes to act as different types of facilitators (World Bank, 2020b). There is a key distinction between this approach and the 'test-and-learn' approach: innovation hubs and regulatory sandboxes are initiatives driven by regulators.

In **Chapter 6**, we map the jurisdictions in APAC that have implemented regulatory sandboxes for FinTech (AFI, 2020a). These include Australia, Bangladesh, Hong Kong, China, Philippines, Singapore, Indonesia, Malaysia, Japan and the Republic of Korea (APEC Economic Committee, 2021). Regulatory sandboxes allow FinTech firms to test their products in a controlled environment without having to meet the challenging threshold expected of training, compliance, risk and qualifications (Baker McKenzie, 2017). For example, Australia allows FinTech firms that want to provide financial services or engage in credit services, to test their products without necessarily holding an Australian Financial Service Licence (AFSL) or Australian Credit Licence (ACL) (CCAF and UNSGS; Baker McKenzie, 2017).

Regulators also actively engage in outreach to FinTech stakeholders, including industry participants (for example associations, incubators, accelerators, innovation labs and investors), and regulatory counterparts for the related sectors, such as financial conduct, security exchange and telecommunications. Some regulators also collaborate with industry-led associations or establish separate entities to support the creation of business-friendly regulations. For example, the Malaysia Digital Economy Corporation (MDEC) operates The Orbit, an innovation hub that offers frequent FinTech training events, including its quarterly 'regulator boot camp' (AFI, 2020a). While establishing such units is not a priority for APAC jurisdictions where FinTech is still nascent, regulators are promoting cross-functional coordination across existing organisational structures and building technical capabilities.

Regulatory challenges

Despite recent rapid developments in FinTech markets across APAC, various regulatory challenges remain. One overarching issue emerging is the continued challenge in APAC of fostering financial inclusion and creating the digital infrastructure to support digital identity. The need to verify identity often leads to obstacles in KYC and customer due diligence (CDD) for those who are financially excluded. Despite the region having some examples of digital identity, such as the Unique Identification Authority of India (UIDAI) providing the Aadhaar digital identity system, KYC checks are still mainly limited to face-to-face identity verification (CCAF, ADBI and FinTechSpace, 2019). In the Philippines, the absence of a national ID system remains an obstacle to e-KYC, despite the region having a favourable regulatory framework for FinTech (World Bank and ASEAN, 2019).

A lack of interoperability across financial services providers in individual jurisdictions has also hindered the progress of financial inclusivity. An increase in interoperability could boost competition by reducing barriers to entry, enabling innovation and supply diversification, and enhancing the performance of financial institutions, giving the consumer greater freedom of choice. Some regulators have launched initiatives to resolve this issue, for example, Bangladesh has completed the testing and pilot of an interoperability solution between 3 banks and 3 mobile financial services providers using the National Payment Switch Bangladesh (NPSB). This was to be scaled up in 2020 but the pandemic halted industry-wide platform testing. (AFI, 2020b).

Regulatory harmonisation is still a significant challenge in APAC, despite active regional collaboration. This manifests itself in a range of ways, such as varying data protection standards, which make it difficult for firms to operate across jurisdictions. This is an issue for cross-border payments and international remittances because each jurisdiction has individual requirements and policies, which makes it harder for payment service providers to offer services at the regional level (CCAF, ADBI and FinTech Space, 2019).

Islamic finance

A notable development in APAC is the emergence of Islamic finance, which refers to financial products and services that comply with Sharia or Islamic principles. Islamic finance is an important theme that emerged from the MENA study and one that is also relevant in APAC. The development of this sub-sector has led to the creation of a specific business model category: Islamic FinTech (CCAF, 2022; CCAF, ADBI and FinTechSpace, 2019). The *Global Islamic FinTech Report 2021* identified 241 Islamic FinTech firms globally, 77 of which are in APAC: 62 from South-East Asia, and 17 from Central and South Asia (Dinar Standard and Elipses, 2021). Malaysia and Indonesia are among the top five Islamic FinTech ecosystems in terms of estimated transaction volume, along with Saudi Arabia and UAE (Dinar Standard and Elipses, 2021).

The Islamic Financial Services Board (IFSB) is based in Malaysia and promotes the soundness and stability of the Islamic financial services industry, covering banking, capital markets and insurance activities. As of June 2021, IFSB had 187 members, comprising 81 regulatory and supervisory authorities, 10 international inter-governmental organisations, and 96 market players (financial institutions, professional firms, industry associations and stock exchanges), operating in 57 jurisdictions (IFSB, 2021).

4. Regulatory approach in specific verticals

4. Regulatory approach in specific verticals

This chapter analyses the current regulatory landscape for specific FinTech verticals across the 20 jurisdictions surveyed. In particular, the chapter looks at digital payments, e-Money, international remittance, P2P lending and ECF. Existing legislation and broader regulatory frameworks are important for FinTech development as market providers seek to navigate the regulatory environment across these verticals.

Digital payments

Payments is a key FinTech vertical for APAC, both because of its size and its relative importance in achieving regulatory objectives such as financial inclusion. Access to financial services for the financially excluded generally commences with payments as a means of receiving remittances or social benefits (World Bank, 2019). Digital payments are considered a major driver of financial inclusion (World Bank, 2019). In APAC, digital payment platforms feature prominently as they play a key role in e-commerce by facilitating the receipt of payments and storing of electronic value for buyers and sellers (World Bank, 2019). Many regulators in APAC have facilitated the use of e-payments in both, which is demonstrated by the widespread adoption of quick response (QR) payments in the region (CCAF, ADBI and FinTechSpace, 2019).

This section considers the regulatory approach to payments, and its related sub-sectors, including e-Money and mobile money and international remittances in key APAC jurisdictions.

Digital payments: regulatory mandate/authority

Most sampled APAC jurisdictions (95%) have a regulator/agency with a mandate/authority for payments. Additionally, there is a greater propensity for jurisdictions to have central banks mandated to regulate payments (75%). Other financial regulators are also responsible for regulating and supervising payments activity (20%); examples include Japan (Japan Financial Service Agency), Marshall Islands (Banking Commission), New Zealand (Financial Market Authority), and Taiwan, China (Financial Supervisory Commission).

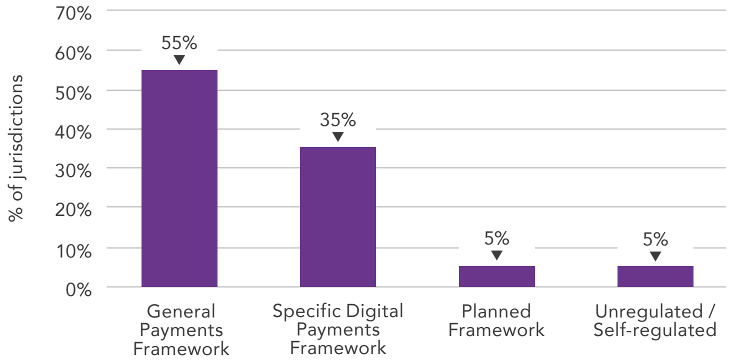
Digital payments: regulatory framework

Figure 4.1 illustrates the approaches adopted by APAC jurisdictions regarding regulatory frameworks for digital payments. In 55% of sampled APAC jurisdictions, regulation of the digital payments sector is undertaken based on a general regulatory framework. This is typically a broad framework that encompasses provisions applicable to different categories of payments activity. It may incorporate provisions on e-Money (including mobile money) and international remittances. Alternatively, 35% of sampled APAC jurisdictions have introduced more targeted frameworks to address developments in DFS by implementing a framework specific to digital payments.

A noteworthy trend is the effort by some APAC regulators to streamline existing payment regulations to ensure they stay abreast of new developments in the sector. This is in addition to integrating payment service providers in a single activity-based regulation.[6] Examples of this include Singapore's Payment Services Act and Thailand's Payment System Act (CCAF, ADBI and FinTechSpace, 2019).

6 Activity based regulation entails applying rules for specific activity uniformly, regardless of the type of entity undertaking the specified activity.

Figure 4.1: Regulatory frameworks over payments – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

Payments: licensing/authorisation

In 70% of sampled APAC jurisdictions, the regulatory frameworks require that providers of payment services obtain a licence from the relevant authority before engaging in this activity. In 20% of jurisdictions, the frameworks prescribe other requirements. For example, in India, the Marshall Islands and the Philippines, a provider may be required to be licensed as well as registered, or conditional approvals may be granted in other jurisdictions, such as in Fiji.

E-Money (including mobile money)

The e-Money and mobile money sector in APAC is significant, with 574 million registered mobile money accounts and almost half of all new registered mobile money accounts globally in 2020 (GSMA, 2021a). Additionally, as of 2020, Asia reportedly accounted for one-third of the value of all mobile transactions globally (GSMA, 2021a).

E-Money: mandate/authority

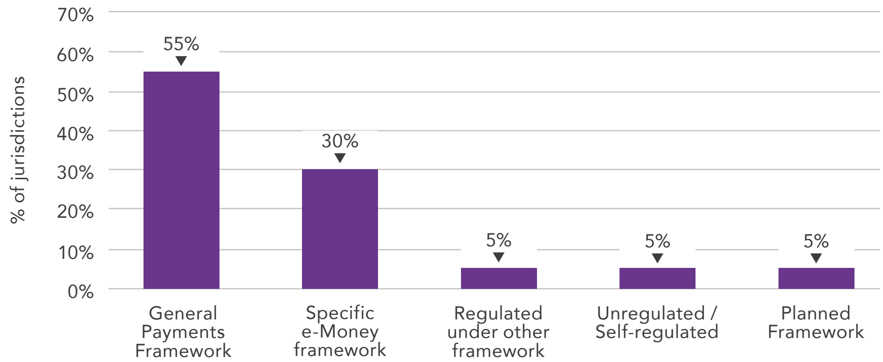
Of sampled APAC jurisdictions, 94% had a regulator with a mandate for e-Money/mobile money issuance. Central banks were most likely to hold this mandate (70%). Other financial regulators also have a mandate in 25% of the sample, such as in Bhutan (Royal Monetary Authority of Bhutan), Hong Kong SAR China (Hong Kong Monetary Authority), Japan (Financial Service Agency), Marshall Islands, and Taiwan, China (Financial Supervisory Commission). This is a departure from the findings in other regions where central banks primarily hold the mandate. In MENA, the instances of financial regulators other than a central bank having a primary mandate over e-Money are 17%, while there are no such instances in SSA.

E-Money: regulatory framework

The approach to the regulation of e-Money varies across APAC. In some cases, it is covered under a general payments framework, while in others it is under an e-Money specific (bespoke) framework. A cross-regional comparison of the different approaches reveals that in the sampled jurisdictions, the highest instances of bespoke e-Money frameworks are in SSA (55%), followed by APAC (30%) and MENA (27%).

The APAC-specific findings shown in **Figure 4.2** also demonstrate that in 55% of sampled jurisdictions, the regulatory framework for e-Money is covered under a general payments framework that contains explicit provisions that target e-Money.

Figure 4.2: Regulatory frameworks over e-Money – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

E-Money: licensing/authorisation

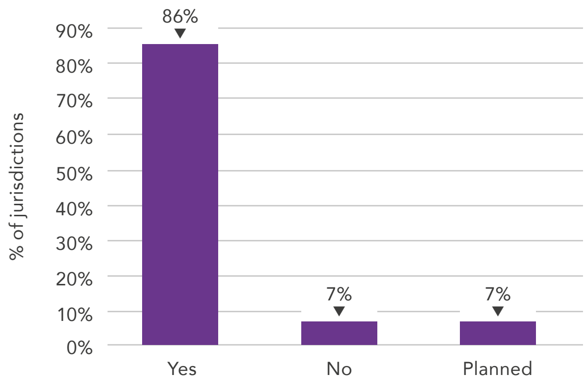
To engage in e-Money activity, issuers in 74% of surveyed jurisdictions are required to obtain a specific licence from the relevant regulator. In 21% of jurisdictions (for example in Fiji, Marshall Islands, New Zealand and Thailand), other requirements, such as registration, are prescribed in addition to or instead of licensing.

In several sampled jurisdictions, regulatory frameworks for e-Money stipulate that both banks and non-banks can become e-Money issuers subject to meeting regulatory requirements. In Indonesia, Malaysia, Philippines, Singapore and Thailand, commercial banks are permitted to become e-Money issuers. For non-bank e-Money issuers, a specific institutional type of regulation has also been established, with most jurisdictions requiring non-banks to obtain an e-Money provider licence (World Bank and ASEAN, 2019).

E-Money: use of agents

Most sampled APAC jurisdictions allow the operation of agents, which has contributed to DFS expansion, and in turn, increased digital financial inclusion (World Bank and ASEAN 2019). APAC's agent network comprises 4 million registered agents, which is 52% of all mobile money agents globally (GSMA, 2019a). The findings in **Figure 4.3** suggest that most sampled APAC jurisdictions (86%) permit the use of agents in e-Money regulatory frameworks.

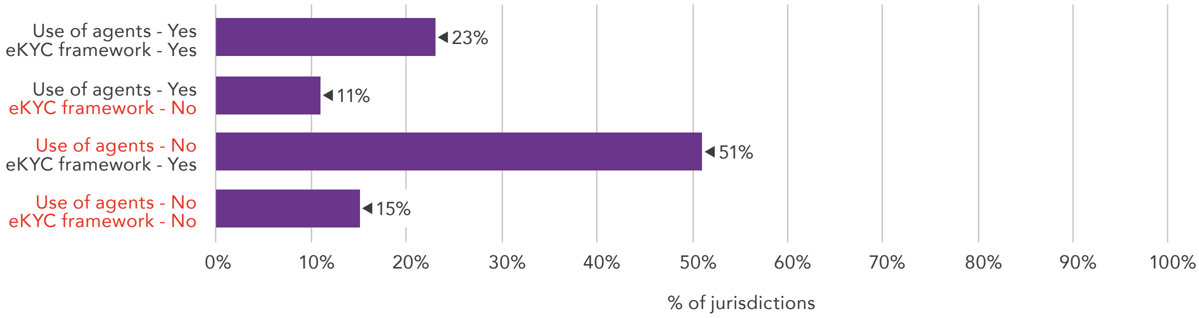
Figure 4.3: Instances of agents permitted within the regulatory framework – APAC (N=14)



Note: N refers to the number of jurisdictions surveyed.

Further analysis was conducted to identify the link between jurisdictions where the use of agents is permitted and the existence of e-KYC provisions. **Figure 4.4** suggests that agents are less likely to be permitted in jurisdictions that have introduced e-KYC requirements (51%). This finding may be partially explained by the fact that where it is possible to undertake e-KYC, the need for agents is diminished. In many jurisdictions where agent usage is prevalent, KYC is typically one of the primary activities these agents undertake. At the same time, this is likely only a partial explanation, as agents do more than just undertake KYC as part of customer onboarding. According to the GSMA (2019b), agents are 'the face of mobile services'. They are also considered integral in the provision of a convenient and trusted method to convert cash to a digital value, and vice versa, exercising other activities such as customer support and education (GSMA, 2020) on behalf of their principals.

Figure 4.4: e-Money: Relationship between agent permission and e-KYC provision – APAC, MENA and SSA (N=53)



Note: N refers to the number of jurisdictions surveyed.

E-Money: safeguarding customer funds

Requirements relating to deposit insurance and protection of customer funds (safeguarding arrangements) are seen as important for fostering trust in, and consequently increasing the usage of, e-Money/mobile money solutions. In APAC jurisdictions, the safeguarding of customer funds is treated in different ways depending on whether the e-Money issuer is a bank or non-bank (World Bank and ASEAN, 2019). For example, the requirement in Indonesia is that the full value of e-Money accounts is placed in escrow at banks, whereas in Malaysia, depending on the size of the non-bank issuer, funds are required to be deposited in a trust account or a separate deposit account at a licensed institution (World Bank and ASEAN, 2019).

In 38% of sampled jurisdictions, safeguarding arrangements are provided by a general deposit insurance framework. In 25% of jurisdictions, this is covered under an e-Money specific framework.

International remittances

The international remittances sector in APAC is significant, as many expatriates in the region remit funds electronically. APAC was the largest remittance-receiving region globally, with $325 billion in formal remittances instructed (45% of global flows) in 2019 (ADB, 2021). In 2021, official records indicated that remittances flow to East Asia and Pacific fell to $131 billion (a 4% drop from 2020). In the case of South Asia, records indicated that remittances grew to $159 billion, an 8% increase from 2020 (World Bank and KNOMAD, 2021; World Bank, 2021c; ADB, 2021). Despite the large global size of the sector, it is still considered to be an untapped opportunity for FinTechs to enter the market in APAC (GSMA, 2019a).

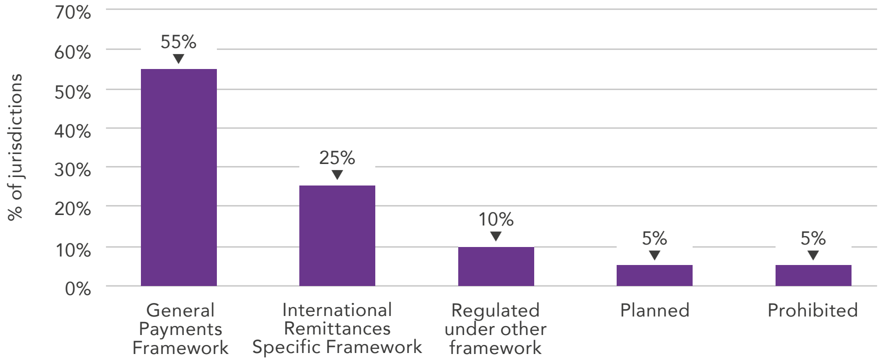
International remittances: regulatory mandate/authority

All sampled jurisdictions in APAC have a regulator with a mandate for international remittances. Central banks have this responsibility in 68% of jurisdictions and 21% have another regulator with this mandate. Jurisdictions with mandated regulators other than the central bank include Australia (Australian Transaction Reports and Analysis Centre), Bhutan (Royal Monetary Authority of Bhutan), China (China Banking Regulatory Commission) and the Marshall Islands. This is similar to findings in MENA, where 22% of sampled jurisdictions have a financial regulator other than the central bank for international remittances. In contrast, no such instances were identified in SSA.

International remittances: regulatory framework

In 55% of sampled APAC jurisdictions, regulation requirements for international remittances are covered within a general payments framework, as shown in **Figure 4.5**. Regulatory frameworks specific to international remittances exist in 25% of jurisdictions and 10% regulate international remittances under other frameworks.

Figure 4.5: Regulatory frameworks over international remittances – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

International remittances: licensing/authorisation

In terms of requirements, 84% of surveyed APAC jurisdictions stipulate licensing/authorisation only and 5% prescribe other requirements, including registration, in addition to licensing.

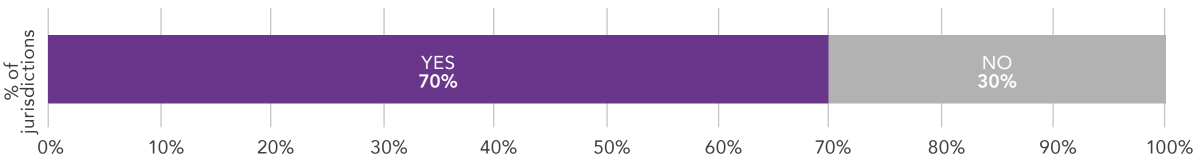
Peer-to-peer lending

Globally, peer-to-peer (P2P) lending is one of the most common FinTech sectors. In response to the emergence of P2P lending, regulators in SSA, MENA and APAC have developed regulatory frameworks for the sector. The number of P2P lending regulations developed correlate with the industry's high presence in APAC, as P2P lending market activity represented $4.8 billion across the region (CCAF, 2021d). P2P lending was also the leading FinTech lending vertical in the region in both 2019 and 2020. Domestic players and homegrown platforms dominated the market, accounting for over 80% of regional volumes (CCAF, 2021a).

P2P lending: regulatory mandate/authority

Most sampled APAC jurisdictions (70%) have established a mandate that covers P2P lending activities, as shown in **Figure 4.6**. This is similar to the finding in MENA, where 67% of sampled jurisdictions have established a mandate, but substantially higher than SSA (35%)

Figure 4.6: P2P lending. Agencies with mandates - APAC (N=20)



Note: N refers to the number of jurisdictions surveyed

Most of the regulatory authorities responsible for P2P lending mandates were securities or capital market regulators (71%). In other jurisdictions, multiple agencies were involved, for example, in China, two agencies were given authority for P2P lending activities: the China Banking Regulatory Commission and the People's Bank of China.

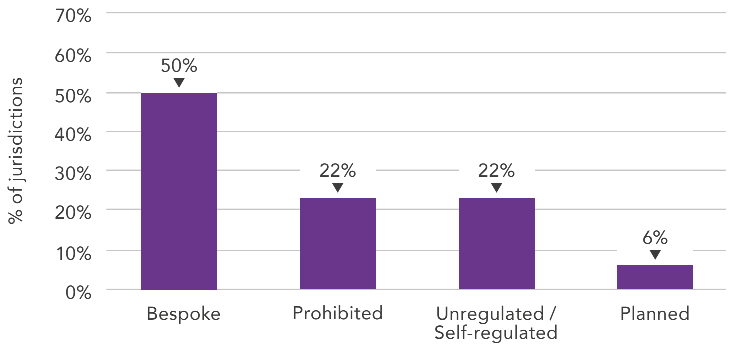
The use of securities and capital markets regulators to oversee P2P lending is similar to that in MENA, where 63% of sampled jurisdictions designate sole licensing and regulatory authority to securities and capital markets regulators. This is in contrast to SSA, where most of the sampled regulators with a mandate for P2P lending are central banks, with just 10% of sampled jurisdictions giving remit to securities and capital markets regulators.

P2P lending: regulatory frameworks

The approach to regulating P2P lending activities varies across sampled APAC jurisdictions. As shown in **Figure 4.7**, establishing a bespoke regulatory framework was most common (50%), with one jurisdiction, Pakistan, planning a regulatory framework for P2P lending activities. Other jurisdictions cover P2P lending activities under a general regulatory framework (22%), and a further 22% do not have a framework with P2P remaining unregulated or self-regulated.

The establishment of bespoke regulatory frameworks for P2P lending activities in APAC is similar to the approach taken in MENA, where 50% of sampled jurisdictions have bespoke frameworks. This differs significantly from SSA, where only 11% of sampled jurisdictions have developed a bespoke regulatory framework for P2P lending activities.

Figure 4.7: Regulatory frameworks over P2P lending– APAC (N=18)



Note: N refers to the number of jurisdictions surveyed.

P2P lending: licensing/authorisation

In APAC, 71% of sampled jurisdictions, for which there is publicly available data, have introduced capital requirements for P2P lenders. These requirements vary significantly across jurisdictions, ranging from approximately $10,000 to $1.5 million. Other APAC jurisdictions with a mandate for P2P lending activities have introduced limits on lending volumes (50%).

P2P lending: consumer safeguards

Of the sampled APAC jurisdictions, 5% have established consumer safeguards in their P2P lending mandates by setting limits on the total amount individuals can borrow on platforms. Limitations imposed on borrowers vary across jurisdictions; some impose caps on the total amount any consumer can borrow on a platform, while others impose caps based on the borrower's monthly or annual income. For example, the Philippines limits consumer's total borrowing to 5% of their annual income. Thailand sets a limit range of between 1.5 and 5 times a borrower's monthly income, depending on the income level. A small number of jurisdictions impose caps on the interest rate P2P lenders are permitted to charge borrowers. For example, Thailand sets the interest rate cap at 15% per year and China limits it to 36% per year.

The approach taken by APAC jurisdictions to capping borrowing limits differs significantly from the approaches in SSA and MENA. While only 23% and 30% of SSA and MENA jurisdictions respectively impose borrowing limits for P2P lending, 55% of APAC jurisdictions impose this requirement. However, most jurisdictions in all three regions do not set interest caps on P2P: 80% of APAC jurisdictions, 91% of SSA jurisdictions and 78% of MENA jurisdictions do not do so.

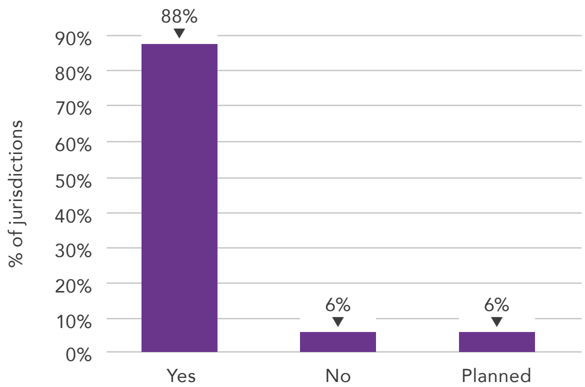
Equity crowdfunding

Equity crowdfunding (ECF) is a collective term describing business models where individuals and/or institutional funders purchase equity issued by a company. ECF is typically conducted via an intermediary online platform that facilitates the sale of equity to sophisticated, institutional and retail investors. Compared to other regions, APAC has a well-established ECF market. In 2020, ECF market activity was approximately $300 million, which was significantly greater than the market activity of $12.5 million in MENA (CCAF, 2021).

ECF: regulatory mandate/authority

As shown in **Figure 4.8**, most sampled APAC jurisdictions (88%) have an established mandate for overseeing ECF activities, and Nepal is developing a mandate. Samoa is the only jurisdiction in our sample that has no established mandate and is also not planning one. These findings are similar to those in MENA, where 91% of sampled jurisdictions have established a mandate, while only 38% of sampled jurisdictions in SSA have established a mandate for overseeing ECF activities. This well-established regulatory infrastructure could be one explanation for the high ECF market activity in APAC (CCAF, 2021d).

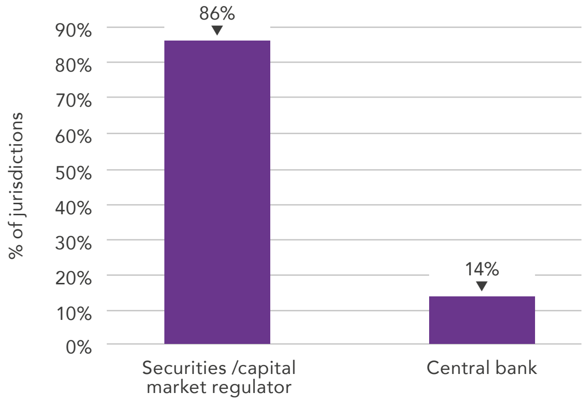
Figure 4.8: ECF. Agencies with Mandates – APAC (N=17)



Note: N refers to the number of jurisdictions surveyed.

In 86% of sampled APAC jurisdictions, regulatory authority for ECF activities was given to securities and capital markets regulators, as shown in **Figure 4.9**. MENA and SSA have employed a more varied approach, indicated by the fact that only 40% and 50% respectively have given regulatory authority to securities and capital markets regulators.

Figure 4.9: Regulators with mandate on ECF – APAC (N=14)

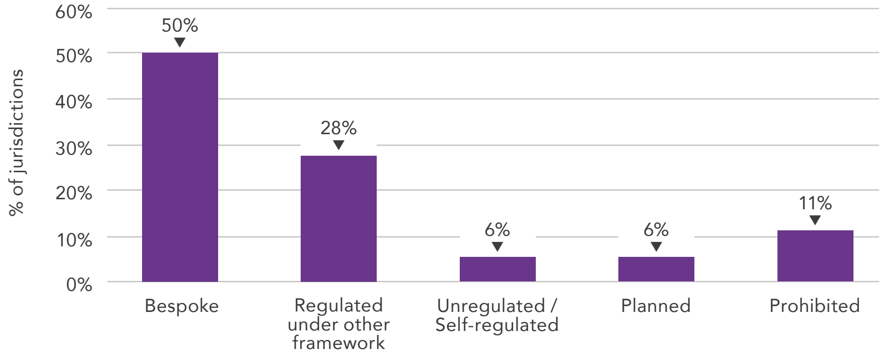


Note: N refers to the number of jurisdictions surveyed.

ECF: regulatory frameworks

While there was some consistency in how sampled APAC jurisdictions established ECF mandates and the regulatory authority they charge with oversight, individual jurisdictions pursue varied approaches in terms of ECF regulatory frameworks. As shown in **Figure 4.10**, 50% of sampled APAC jurisdictions have established bespoke regulatory frameworks for ECF, while 28% used other existing regulatory frameworks. Two jurisdictions, India and Pakistan, prohibit ECF activities. Samoa has not established a regulatory framework.

Figure 4.10: Regulatory frameworks over ECF – APAC (N=18)



Note: N refers to the number of jurisdictions surveyed.

While 50% of APAC's sampled jurisdictions have developed a bespoke regulatory framework for ECF; the corresponding figure for MENA is 69% and for SSA it is 17%. 28% of APAC jurisdictions regulate ECF under other frameworks. ECF is unregulated or self-regulated in only 6% of surveyed APAC jurisdictions, while ECF is unregulated or self-regulated in 15% of MENA jurisdictions and 33% of SSA jurisdictions. 6% of surveyed APAC jurisdictions plan to develop an ECF regulatory framework, which is like the 8% of surveyed MENA jurisdictions that plan to do the same. Perhaps because of the much lower percentage of jurisdictions that have an ECF regulatory framework in place, 33% of SSA jurisdictions plan to implement an ECF regulatory framework. The approach of prohibiting ECF activity is similar in APAC (11%) and MENA (8%) jurisdictions. This differs from SSA, where none of the jurisdictions prohibits the activity.

ECF: licensing/authorisation

Most sampled APAC jurisdictions have established similar licensing requirements. 12 jurisdictions have limited the amount of equity an entity can offer through ECF activities. Eight jurisdictions have established capital requirements as part of their licensing requirements for ECF platforms, which range from approximately $2,000 to $1.8 million (CCAF 2021d).

ECF: consumer safeguards

Ten of the sampled APAC jurisdictions impose limits on the amount retail investors can invest in ECF. The type of limitations imposed vary across jurisdictions; some jurisdictions impose caps on the amount a retail investor can invest per year, while others limit the amount invested based on the investor's income. Two jurisdictions, Pakistan and India, prohibit retail investors from engaging in ECF activities, allowing only experienced and/or professional investors to engage in these activities.

5. Cross-sectoral themes

5. Cross-Sectoral Themes

FinTech firms are not only affected by regulatory frameworks in their sub-sector, but also by related cross-cutting financial regulations and frameworks. Regulators are becoming more aware of the role that FinTech can play in ensuring financial consumer protection, data protection and cybersecurity in DFS . This chapter evaluates the existence of frameworks on cross-sectoral issues that support the development of DFS.

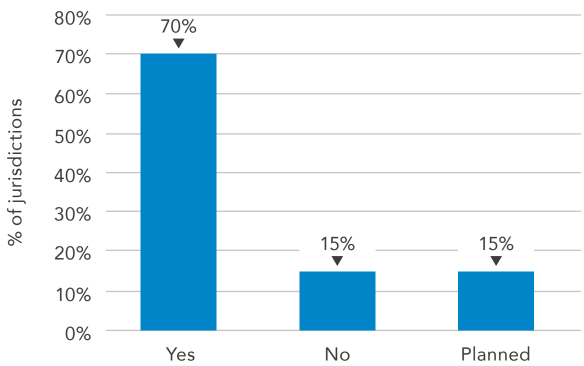
Data protection

This section identifies the data protection mandates and frameworks established in selected APAC jurisdictions. Implementing policies on data protection is a key priority for regulators, with most jurisdictions having some form of data protection and data privacy laws. In response to the increased data protection and cybersecurity threats regulators perceived during the COVID-19 pandemic, regulators and government bodies increased their adoption of data protection mandates and related policies such as cybersecurity (Ehrentraud et al, 2020).

Data protection: regulatory mandate/ authority

As shown in **Figure 5.1**, most of the sampled APAC jurisdictions (70%) have mandates for data protection and 15% have plans to adopt one. The regulatory authority with the mandate varies across jurisdictions, for example, a Personal Data Protection Commission or Personal Information Protection Commission (Singapore and Japan), an Office of Privacy Commissioner for Personal Data (New Zealand and Hong Kong SAR China), a Department of Personal Data Protection (Malaysia), or a Personal Data Protection Committee (Thailand). Not only do the regulatory authorities vary across jurisdictions, but their levels of autonomy also differ. For example, the Office of Privacy Commissioner for Personal Data in Hong Kong, and the Personal Data Protection Commissions in Singapore and Japan, are independent regulators. The Department of Personal Data Protection in Malaysia is an agency under the Ministry of Communications and Multimedia, and the Personal Data Protection Committee of Thailand is under the supervision of the Minister of Digital Economy and Society.

Figure 5.1: Data protection. Authorities with mandate – APAC (N=20)

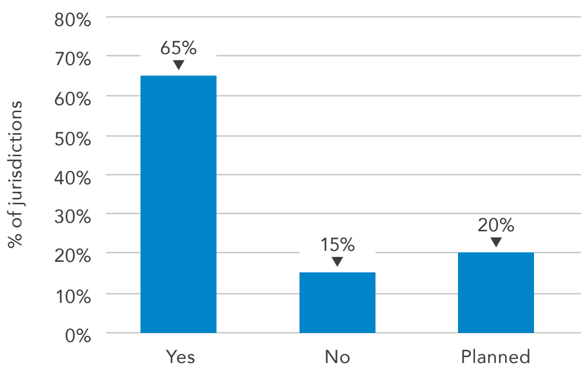


Note: N refers to the number of jurisdictions surveyed.

Data protection: domestic

Among the sampled APAC jurisdictions, 65% have a national data protection framework in place, 20% are planning a national framework and 15% have no identified frameworks, as shown in **Figure 5.2**.

Figure 5.2: The domestic data protection frameworks – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

An example of a data protection regulatory framework in place is Australia's *Privacy Act 1988 (No. 119, 1988)*, which consolidates its data protection laws to protect the privacy of individuals and provide the basis for consistent regulation of privacy and handling of personal information (AG, 1988). This Act, together with the Australian Privacy Principles, constitute an integral and comprehensive regulation for data protection and privacy in the country.

As a different example, the Laos´ Electronic Data Protection Act of 2017 provides data protection to Lao citizens in circumstances where electronic information is collected, accessed, used or disclosed. The Act provides for general protection to personal information and establishes essential concepts such as consent, data retention and deletion practices, ensuring data accuracy. Similar to Australian Privacy Principles as complement/basis of the Australia´s Privacy Act, The Laos´ Electronic Data Protection Act is supplemented by the "Introduction on Implementation of the Electronic Data Protection Act", which sets out examples of how data protection procedures may be implemented by companies.

Data protection: financial services industry

Of the sampled APAC jurisdictions, 90% have a financial-service-specific national data protection framework in place. India plans to introduce a framework and Samoa does not have one in place. The prevalence of frameworks specifically established for financial services is similar to that across sampled jurisdictions in MENA (85%) and SSA (85%).

Cybersecurity

The COVID-19 pandemic has increased cybersecurity threats and the awareness of cybersecurity risks: 82% of surveyed regulators perceived that cybersecurity risks were increasing as evidenced in **Figure 2.3**. This section analyses the regulatory approaches to cybersecurity and financial sector cybersecurity frameworks in sampled APAC jurisdictions. Cyber threats are not localised within jurisdictions but cut across borders. However, the regulation of cybersecurity across jurisdictions in APAC appears fragmented and localised, with no substantial developments toward regional harmonisation. Currently, the region is entering a 'second wave' of cybersecurity regulation. The 'first wave' was a call to action to all jurisdictions to set specific minimum levels of cybersecurity. In this 'second wave', regulators across APAC jurisdictions will set more robust standards for firms to implement (Deloitte, 2021), the aim being to build cyber resilience across national borders. Examples of this 'second wave' which incorporate the learnings from the response to and implications of the pandemic, include:

- Security Legislation Amendment (Critical Infrastructure) Bill 2020 from Australia that classifies financial services as part of 'Critical National Infrastructure';
- Cybersecurity Fortification Initiative 2.0. from HKMA which include enhanced version of cybersecurity incident response, threat intelligence changes, and attack simulations.
- In Singapore, MAS sought to update the guidelines on technology risk management and business continuity management. The Personal Data Protection Act was also amended to require mandatory breach notification (Deloitte, 2021).

Cybersecurity: regulatory mandate/authority

All sampled jurisdictions in APAC have a mandate/authority for cybersecurity in place. The authorities with a mandate for cybersecurity vary across jurisdictions, for example, the Ministry of Post and Telecommunications in Laos and Nepal, the Ministry of Communication and Information Technology in Samoa and its equivalent in India, the Ministry of Defence in Indonesia, as well as more specialised authorities such as the Cyberspace Administration of China and the National Cybersecurity Agency in Malaysia and Singapore.

These findings indicate there are differences between regulators in terms of capabilities and supervisory obligations regarding cybersecurity, and hence different approaches to implementing cybersecurity measures and regulations.

Cybersecurity: domestic frameworks

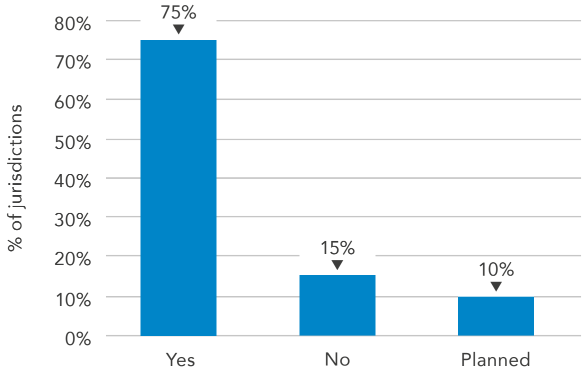
95% of sampled APAC jurisdictions have an existing cybersecurity framework in place and the remaining 5% plan to introduce one. This prevalence is marginally higher than in sampled SSA (85%) and MENA (92%) jurisdictions.

Japan is an example of a jurisdiction that is prepared for cybersecurity risks. Its existing cybersecurity-related laws include the *Basic Act on Cyber Security*, the *Act on the Protection of Personal Information*, and the *Act on the Prohibition of Unauthorised Computer Access*. Other existing frameworks, and developed policies and strategies, include the Cybersecurity Policy for Critical Infrastructure Protection, the International Strategy on Cybersecurity Cooperation, the Cybersecurity Strategy 2018, and the Defence of Japan 2020 (Unidir, 2021).

Cybersecurity: financial services industry

As shown in **Figure 5.3**, 75% of jurisdictions across the APAC sample have a financial-services-specific cybersecurity framework in place, 10% plan to introduce one and 15% have no framework. This is significantly higher than sampled jurisdictions in MENA (54%) but less than in SSA jurisdictions (85%).

Figure 5.3: Financial service industry cybersecurity frameworks – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

Cybersecurity: efforts and measures during the COVID-19 pandemic

75% of sampled APAC jurisdictions implemented new specific cybersecurity measures in response to the COVID-19 pandemic (CCAF and World Bank 2020). **Table 5.1** summarises some of these cybersecurity measures.

Table 5.1: Examples of Covid-19 specific cybersecurity efforts and measures

JURISDICTIONS	COVID-19 CYBERSECURITY EFFORTS	DETAIL OF COVID-19 CYBERSECURITY MEASURES
Australia	The Australian Cyber Security Centre (ACSC) has published advice to help protect people to strengthen their cyber defenses and be alert to online threats through a new national cyber security campaign.	The ACSC issued Cybersecurity tips.
China	The Cyberspace Administration of China ("CAC") released the Notice on the Protection of Personal Information when Using Big Data for Joint Support and Defense ("2019-nCoV Personal Information Notice") on February 9, 2020, setting forth a few privacy and cybersecurity principles in connection with the collection, use, and disclosure of personal information for purposes of containing 2019-nCoV.	The Notice established some cybersecurity mechanisms to protect personal information such as: • Determine authorized entities for legally collect personal information for purposes of containing Covid-19 pursuant to the Cybersecurity Law. • Data minimization principle • Entities shall implement organizational and technical measures to prevent theft or leakage of information.
India	The CERT-In, the Indian Computer Emergency Response Team and ReBIT, the technology arm of the Reserve Bank of India (RBI) issued warnings about online threats and scams and asked financial institutions to be aware.	CyTrain (National Crime Record Bureau), part of the Ministry of Home Affairs issued a Cybersecurity tips booklet in which they determined tips in the following topics: • Online transactions/Financial Fraud • Identity theft/ cyber impersonation • Unauthorized access / data breach • Phishing & Spamming • Ransomware
Japan	Japan's Ministry of Trade urged businesses to exercise greater leadership and strengthen internal cyber security efforts, warning cyber-attacks could worsen with the increase in telework. A new ministerial report highlights the fact that overseas hackers are targeting small and large firms with globalized supply chains and those promoting expansion overseas.	The Ministry of Economy, Trade, and Industry ('METI') released, on 30 September 2020, a guide on cybersecurity systems and training human resources. In particular, the guide outlines recommendations for building a cybersecurity system.
Singapore	The Cyber Security Agency of Singapore (CSA) issued warnings and tips to stay cyber-safe.	The CSA issued an infographic called "How to Stay Cyber Safe During the COVID-19 Situation: bringing Your Business Online Securely" in which they determined to set strong passwords, do not use personal information in your passwords, enable Two-factor authentication, perform anti-virus scans and keep software up-to-date.

Open banking

Open banking: regulatory mandate/authority

Open banking refers to making account and transaction data accessible in a secure, consent-driven manner, allowing third-party developers to build new and innovative financial products and services using existing banking infrastructure. These services, which often tackle issues of financial inclusion and education that have traditionally been passed over by incumbents, have facilitated regulators' goals of increasing access to their underbanked populations and assisting consumers in achieving financial wellness. In practice, open banking is used to permit account transactions, such as transfers and payments, through application programming interfaces (APIs).

Approaches to facilitate open banking vary across sampled APAC jurisdictions. Examples of jurisdictions that are successfully implementing open banking frameworks and open API integration include Singapore, Hong Kong, Australia and India. However, not all these frameworks are based on mandatory market participation, nor has the regulator led the way in setting standards for the market. For example, in Hong Kong and Singapore, it is not compulsory for the incumbent banking sector to participate in open banking. This is in contrast to other open banking regimes, such as in the UK, which make it compulsory for incumbent banks to adhere to data sharing policies. Instead, 'traditional retail banks [in Hong Kong and Singapore] are being encouraged to develop more personalised and novel services in collaboration with third-party providers' (Accenture Consulting, 2019) to spur innovation.

Singapore, though market-driven, has taken a strong top-down approach to implement open banking. The Monetary Authority of Singapore (MAS) set up the Singapore Financial Data Exchange (SGFinDex) allowing banks to exchange data voluntarily, but has strongly encouraged banks to go above and beyond the suggested APIs and make additional information and processes available to developers and third parties (MAS, 2021c). SGFinDex, a public-private collaboration, was launched so that individuals could allow or withhold consent online for their financial information held across government entities and financial institutions to be used. This was done by using individuals' national digital identities stored in one centralised portal.

In contrast, Hong Kong chose a light-touch, phased market-driven approach to open banking. Announced by the Hong Kong Monetary Authority (HKMA) in September 2017, the first two phases encouraged banks to disclose public data and open digital channels for acquisition. These were followed by the second two phases that were gradually introduced from the end of 2021. These two phases allowed access to account information, and enabled payments and transfers (HKMA, 2017). In contrast to other jurisdictions, such as Australia, HKMA has not mandated open banking, instead opting for a voluntary opt-in process and providing high-level guidance assisting financial institutions to agree on standards amongst themselves.

In Australia, the rollout of the Consumer Data Right (CDR) legalised, and made mandatory, open banking across financial institutions. Interestingly, the Australian Securities and Investments Commission (ASIC), and the Australian Competition and Consumer Commission (ACCC), did not follow the general trends seen in open banking. Instead, these commissions guided alternative methods of data sharing outside standardised APIs and permitted screen scraping. And although they later issued warnings to consumers about the risks of sharing credentials with unknown third parties, they recognised that digital data capture services are similar to APIs, in that they are a secure means of accessing information (AFR, 2020). This example illustrates that the technical methods sanctioned by regulators vary just as much as the frameworks implemented across jurisdictions.

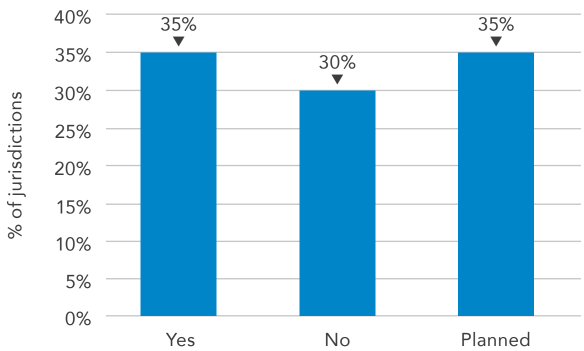
India is another example of an APAC jurisdiction that is implementing open banking. Its hybrid approach to open banking has been strengthened, underpinned by previous progress in enabling access to financial services that had traditionally underserved parts of the population. Through its 'India-Stack' approach India has focused on several inter-related and pre-cursor regulatory and policy initiatives that create the necessary conditions for implementing an Indian open banking scheme. 'India-stack' is a public-private unified software platform that was introduced more than ten years ago to integrate government and business processes. It now includes an interoperable payments system, underpinned with universal digital ID. The National Payments Corporation of India (NPCI), with support from the Bank of India, regulates the payment scheme. It has now also launched the Account Aggregator framework to actively promote the development of new services. Even though the platform is not mandated, India's financial institutions are keen to leverage the 'India-Stack' (Carrière-Swallow, Haksar and Patnam 2021).

In contrast to jurisdictions such as the UK that have a formal regulatory programme aimed at implementing open banking infrastructures and principles across the financial market, India has taken a more 'piecemeal' approach. By creating rules and initiatives that focus on 'key components' that are a pre-requisite to open banking, India is laying the foundation towards formal open banking interventions. Initiatives that are currently being pursued by regulators include providing clarity on data registries, defining who, how and what data can be stored and further refining account aggregation rules and supervision.

Open banking: domestic frameworks

As shown in **Figure 5.4**, 35% of sampled APAC jurisdictions have an open banking framework in place, 35% plan to introduce one and 30% have no framework in place.

Figure 5.4: Open banking existing and forthcoming frameworks – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

Grouping this data according to the World Bank's income level classifications shows that most sampled high-income jurisdictions have an open banking framework in place (83%), whereas in lower-middle-income jurisdictions the figure is much lower (43%). 57% of upper-middle-income jurisdictions plan to introduce an open banking framework.

Table 5.2 provides an overview of the open banking frameworks in place across APAC jurisdictions. The table also includes data protection and cybersecurity frameworks.

Table 5.2: Open banking. Existing and forthcoming open banking frameworks

	OPEN BANKING FRAMEWORK IN PLACE	PLANNED OPEN BANKING FRAMEWORK	FINANCIAL SERVICE INDUSTRY DATA PROTECTION FRAMEWORK IN PLACE	FINANCIAL SERVICE INDUSTRY CYBERSECURITY FRAMEWORK IN PLACE	FINANCIAL SERVICE INDUSTRY CYBERSECURITY ROADMAP/ STRATEGY IN PLACE
Australia	✔		✔	✔	
Hong Kong, China	✔		✔	✔	
India	✔			✔	
Japan	✔		✔	✔	
Marshall Islands	✔		✔	✔	
Singapore	✔		✔	✔	
Taiwan, China	✔		✔	✔	
Bhutan		✔	✔	✔	
China		✔	✔	✔	
Indonesia		✔	✔		✔
Malaysia		✔	✔	✔	
New Zealand		✔	✔	✔	
Philippines		✔	✔		✔
Thailand		✔	✔	✔	

Note: The information was collected through publicly available information.

14 jurisdictions in APAC have an existing or planned open banking framework. Additionally, all jurisdictions that have implemented an open banking framework have also implemented specific cybersecurity standards for the financial services industry, and all but one have also implemented data protection frameworks for the financial services industry.

Similarly, all jurisdictions that are planning an open banking framework already have data protection rules in place for financial services. All but two of these jurisdictions have implemented specific cybersecurity frameworks, but they do have cybersecurity roadmaps and strategies.

Financial consumer protection

FCP encompasses the laws, regulations and institutions that ensure the safety of consumers in their use of financial services and products. An effective FCP regime enables consumers of financial products and services to make well-informed decisions, protects the development of financial services, and supports the wider aims of financial stability, financial integrity and financial inclusion (World Bank 2017a).

The challenge facing regulators is effectively ensuring consumer protection in an increasingly digital financial services marketplace. Consumer protection is a key mandate for regulators globally and has been identified as an increasing concern regarding FinTech in response to COVID-19, as seen in **Figure 2.2**.

FCP: regulatory mandate/authority

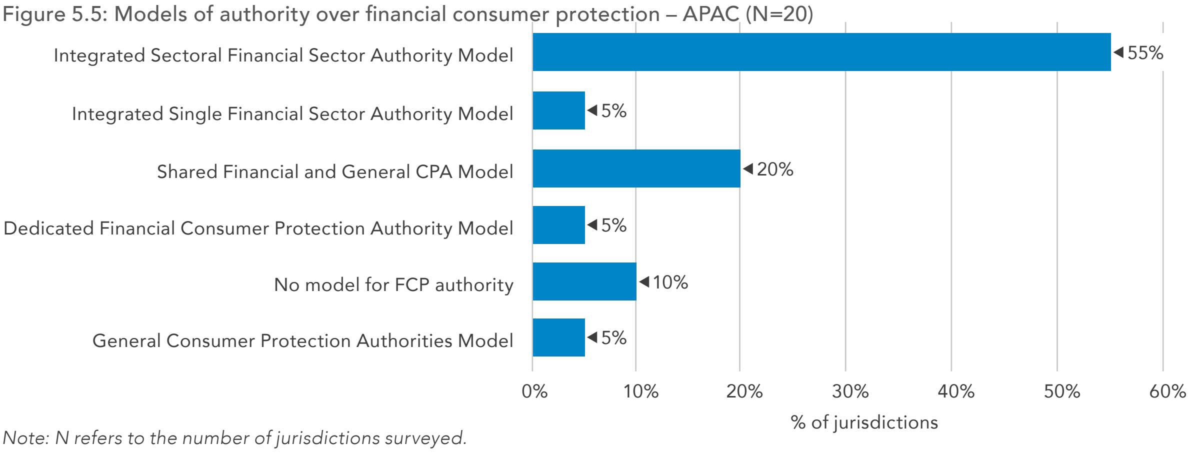
Many institutional regulatory models for FCP exist. To clarify and simplify this study's mapping of these models, the study employed the models used by the World Bank FCP survey (World Bank 2017b). The World Bank grouped the different regulatory arrangements as follows:

- **Integrated Single Financial Sector Authority Model:** Where FCP supervision responsibilities fall under a single financial sector authority that is responsible for all aspects of supervision of all financial products or service providers.
- **Integrated Sectoral Financial Sector Authority Model:** Where FCP supervision responsibilities fall under multiple financial sector authorities, each responsible for all aspects of supervision of financial service providers operating within specific financial sectors.

- **Dedicated FCP Authority Model:** Where FCP supervision responsibilities fall under a single authority primarily dedicated to FCP or market conduct more broadly.
- **Shared Financial Sector and General Consumer Protection Authority Model:** Where one or more financial sector authorities, and one or more general consumer protection authorities, share FCP supervision responsibilities.
- **General Consumer Protection Authority Model:** Where financial consumer supervision responsibilities fall under one or more authorities responsible for general consumer protection supervision within the jurisdiction.

Figure 5.5 shows that of the sampled APAC jurisdictions, 55% have an Integrated Sectoral Financial Sector Authority Model. In some jurisdictions, for example, Laos, New Zealand, Singapore and Taiwan, financial consumer protection is part of the remit of a governmental department or ministry rather than of one of market regulators.

Figure 5.5: Models of authority over financial consumer protection – APAC (N=20)



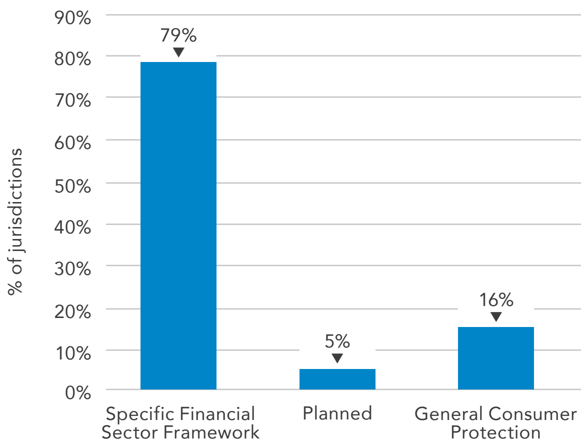
Note: N refers to the number of jurisdictions surveyed.

The G-20/OECD high-level principles also state that authorities need clear responsibility and the authority to fulfil their mandate in the financial markets that they regulate. Especially for the 20% of sampled jurisdictions that resort to shared responsibility over financial consumer protection, authorities must have the necessary clarity with regards to their roles to avoid overlaps and inconsistent approaches (World Bank, 2017a). This is important for FinTech where the business proposition cuts across several regulators.

FCP: regulatory frameworks

The vast majority of APAC jurisdictions have specific national laws concerning financial consumer protection in place (79%), with a further 5% of jurisdictions having one planned and 16% utilising general consumer protection frameworks, as illustrated in **Figure 5.6**.

Figure 5.6: Financial sector specific consumer protection frameworks – APAC (N=19)



Note: N refers to the number of jurisdictions surveyed.

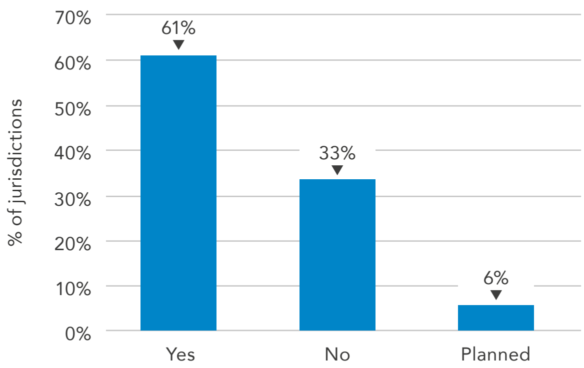
Approaches vary between jurisdictions. China and India have opted for general consumer protection laws without a set of explicit provisions regarding financial services. They have, however, included financial consumer protection provisions within the financial sector rules and regulations. Sri Lanka and

Indonesia have included explicit financial consumer protection provisions in both their general consumer protection laws as well as in other financial services frameworks.

FCP: measures in response to COVID-19

In response to the FinTech risks caused by COVID-19, regulators in many jurisdictions have introduced new measures, including measures that relate to consumer protection. In APAC, 61% of surveyed jurisdictions increased consumer protection measures in response to the COVID-19 pandemic, as shown in **Figure 5.7**. This is higher than in SSA (45%) and comparable to MENA (64%). The measures introduced by APAC jurisdictions concentrated on disseminating information to the public and companies regarding the increase in scamming and fraud risks. Some jurisdictions implemented liquidity and financial stability measures which impacted the ability of market participants to access their funds.

Figure 5.7: Financial consumer protection measures in response to COVID-19 – APAC (N=18)



Note: N refers to the number of jurisdictions surveyed.

Table 5.3 outlines some specific examples of FCP measures from the sampled jurisdictions.

Table 5.3: Examples of Financial Consumer Protection Measures taken by APAC regulators in response to COVID-19

JURISDICTION	COVID-19 CONSUMER PROTECTION EFFORTS	DETAIL OF COVID-19 CYBERSECURITY MEASURES
Australia	Engaging with risks emerging from the pandemic with bespoke guidance and through the facilitation of dispute resolution.	Issuing guidance to insurance companies in respect to their expected response to the COVID-19 pandemic. Creating a Regulatory Guide for Internal Dispute Resolution in the insurance sector.
China	Increasing the speed of the development and deployment of a fully-fledged mechanism for the protection of financial consumers' rights.	The People's Bank of China released the Implementation Measures of the People's Bank of China for the Protection of Financial Consumer Rights – PBC Order No. 5/2020, which took effect from November 1, 2020.
India	Increasing support for the deployment of digital payments services and for boosting their security. Continuing efforts for fostering financial literacy and education, as risks were perceived to have increased as a result of the COVID-19 pandemic.	Measures include bespoke regulation for Non-Bank Financial Companies, improvements to the ecosystem of digital payment channels through the issuance of the Digital Payment Security Controls Directions for regulated entities, the strengthening of the Centres for Financial Literacy (CFL), the enhancement of the grievance redress mechanism in banks and accelerating the transition for the Payment and Settlement Systems to be 24x7.
New Zealand	Issuing clear guidance on consumers with regards to market volatility because of the COVID-19 pandemic.	All the main financial regulators in New Zealand issued samples and guides to consumer messaging and created dedicated landing pages to deal with the emerging risks resulting from the COVID-19 pandemic.

Anti-money laundering and electronic know your customer

Money laundering (ML) and terrorist financing (TF) are key concerns of regulators in an increasingly globalised world. As a result, there is both increasing interest and increasing pressure, for AML and CFT regulations, which has been heightened because of the effects of the COVID-19 pandemic. The move to more DFS has an impact on ML/TF risks by increasing the number of providers, and type of financial services and products, reducing the time and effort required to move funds. Additionally, technology can be used to reduce criminal activity and the cost of monitoring ML and TF.

Technology can also simplify and reduce the cost of processes related to AML and CFT, and introducing e-KYC processes enables the digital verification of clients. These measures reduce ML/TF risks and decrease the time taken for client onboarding.

The COVID-19 pandemic has increased ML and TF risks, prompting the Financial Action Task Force to recommend the use of technology to improve AML checks (FATF 2020a). Regulators reported an increase in COVID-19-related crimes; fraud, cybercrime and expropriation of government or international financial assistance were most frequently cited. At the same time, the pandemic negatively impacted the ability of regulators and the private sector to carry out their AML/CFT duties, for example by preventing onsite inspections.

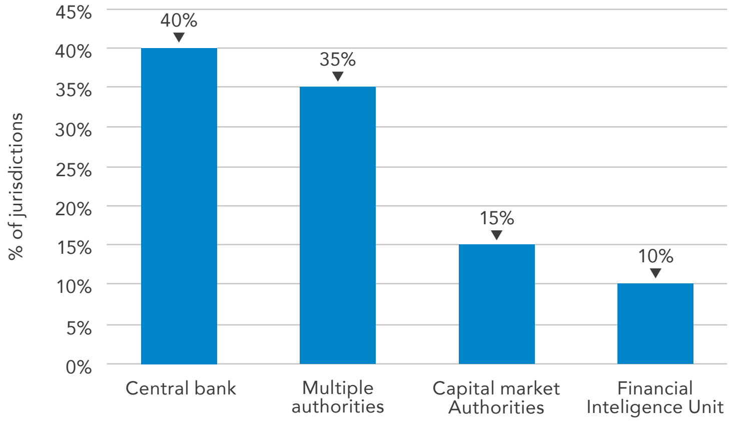
The existence of both domestic and international financial centres in APAC increases the requirement of cooperation and coordination across the agencies with the mandate of regulating AML and CFT.

AML: regulatory mandate/authority

AML/CFT compliance encompasses a range of sectors, including non-financial sectors, resulting in non-financial agencies also being given the authority to regulate AML/CFT in financial services. This can be seen by the multiple authorities in sampled APAC jurisdictions with an AML/CFT mandate.

Although central banks often serve as the main regulators for AML/CFT in APAC (40%), **Figure 5.8** shows that there are several jurisdictions with multiple authorities with a mandate for AML/CFT (35%). The proportion of jurisdictions in APAC for which the central bank is the main regulator for AML is lower than in MENA (46%) and SSA (55%).

Figure 5.8: Main regulators for AML in financial services – APAC (N=20)



Note: N refers to the number of jurisdictions surveyed.

A financial intelligence unit (FIU) is a body that can be integral to international AML/CFT cooperation because it collects and investigates suspicious activity identified by the private sector, and often is the key point of contact for international requests for information. Its importance has been underscored by a range of initiatives, such as the Egmont Group, which is a body of 166 FIUs that seeks to enable knowledge exchange to combat ML. The fact that 85% of the FIUs of the surveyed APAC jurisdictions are members of the Egmont Group might indicate fewer barriers to cooperating internationally and exhibit best practices in combating ML/TF for those who are members.

E-KYC: domestic frameworks

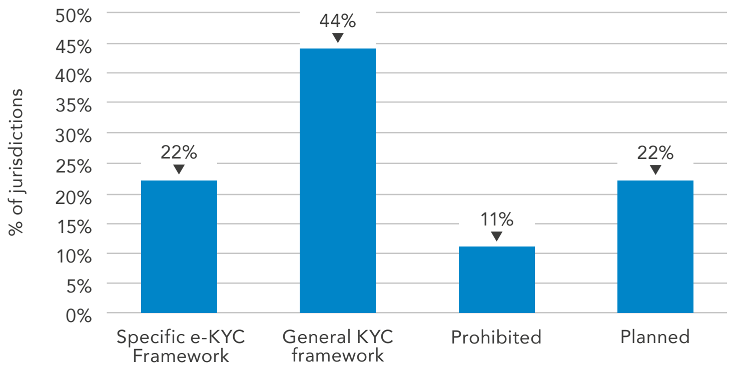
Except for one surveyed jurisdiction (Bhutan), in which a legal framework for AML/CFT is forthcoming, all other sampled APAC jurisdictions already have laws and regulations in place that define illegal activities of ML/TF, and provide regulators with the authority to supervise financial services activity to ensure illegal activity does not take place.

An important part of AML/CFT efforts is the customer due diligence process, which seeks to identify and verify the customer, along with the ultimate beneficial owner if the customer is a legal entity, and undertake a risk assessment of that individual or entity. The KYC process that takes place during the onboarding of a client, has traditionally required in-person verification. However, enabling this process to take place digitally (e-KYC) can reduce the costs of onboarding while being an equally, if not more effective, way to manage risks related to identity fraud.

Some FinTech firms consider the lack of clearly defined e-KYC frameworks by jurisdictions as a key stumbling block to their growth and ability to scale (CGAP 2019a). The shift to remote working during the pandemic has increased the demand for e-KYC processes in APAC, as shown in **Figure 7.4**. In a CCAF survey of 286 market participants in APAC, 33% indicated that more regulatory support for e-KYC processes was something that they urgently needed. This need was more pressing in jurisdictions where lockdown measures were more stringent than in others (CCAF, WEF and World Bank 2020).

In APAC, 22% of sampled jurisdictions have an e-KYC specific framework, 44% allow some form of e-KYC within their existing KYC framework and 22% plan to introduce specific frameworks. Thus, 66% of sampled APAC jurisdictions have a framework regulating e-KYC. This is similar to the proportion in MENA (67%) and higher than that in SSA (53%).

Figure 5.9: Regulatory frameworks over e-KYC - APAC (N=18)



Note: N refers to the number of jurisdictions surveyed.

There are some notable examples in APAC of e-KYC efforts that are combined with digital identity systems and RegTech.

India
India's digital system, Aadhaar, is one of the most cited examples. The project was initiated in 2009 and comprises a government-issued identification number and card after submitting biometric data (Chhugani 2021). In 2016, however, the *Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits, and Services)* Act made it virtually mandatory for all citizens to acquire an identification number enabling them to access government subsidies and other services such as opening bank accounts (Chowdhry, Goyal and Ahmed 2021; Orren 2020). This identification system is controlled by the Unique Identification Authority of India (UIDAI) (Bhala 2015). Based on Aadhaar, banks and other financial institutions have deployed paperless e-KYC authentication services, reducing the time and costs involved in conducting KYC (Arner, Zetzsche, Buckley and Barberis 2019; GSMA 2019b).

Hong Kong
The Hong Kong Monetary Authority deployed the HKMA Digitalisation Program to enhance its AML supervisory processes. Through an AML/CFT RegTech Forum, the HKMA started to engage with AML-related licensees to accelerate the adoption of regtech and suptech (Deloitte and HKMA 2020, 2021). HKMA also facilitated knowledge exchange between member banks of the Fraud and Money Laundering Intelligence Taskforce, which eased the adoption of KYC-related technologies (Deloitte and HKMA 2020, 2021).

Singapore
The SingPass system provides the National Digital Identity alongside other government services. The most important service is MyInfo, which contains verified personal

information that can be managed and shared by the user (Government Technology Agency 2021; Sin and Naing 2021). This last function is especially useful for KYC purposes in the financial sector and aligns with efforts by the Monetary Authority of Singapore to make Singapore a FinTech hub (GSMA 2019b; Lin 2019).

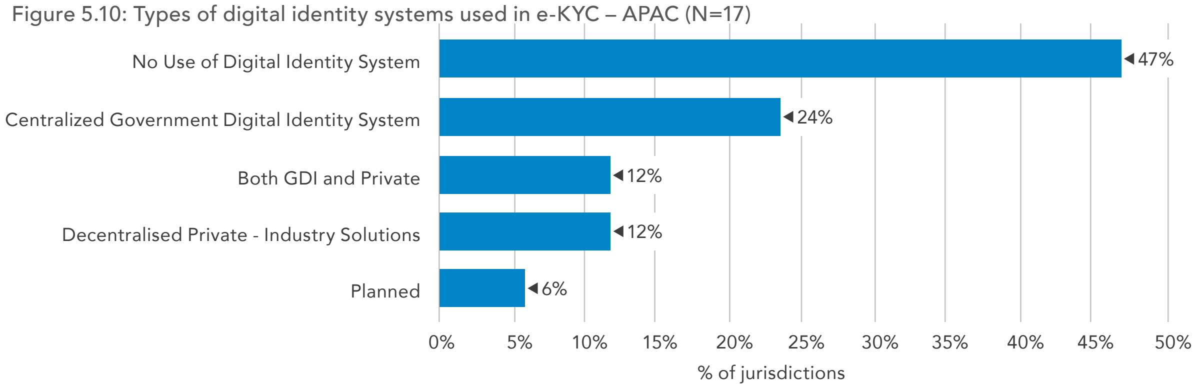
New Zealand
New Zealand is known to promote FinTech activities through innovative regulatory activities (CCAF 2021b). As an example, it launched a digital identity digital ID system called RealMe in 2013 after the approval of the *Electronic Identity Verification Act 2012* (Commonwealth Secretariat 2017). The system is managed by the Department of Internal Affairs (DIA) and enables financial institutions to carry electronic due diligence in compliance with KYC/AML/CTF rules (Goode 2019).

AML and e-KYC: digital identity systems

The use of electronic verification and identification often requires collaboration between financial service providers and government entities to access private or public databases. This collaboration can relate to a creation or use of an existing digital ID system. Digital ID is a form of proving someone's identity through digital means (Goode 2019; Sullivan 2018). Sampled jurisdictions in APAC extensively use digital ID systems to establish e-KYC frameworks, the types of which, and their prevalence, are shown in **Figure 5.10**. This is important for the region's financial services sector, as it facilitates the verification of a customer's identity by those institutions when onboarding and conducting KYC/AML/CFT due diligence.

48% of sampled APAC jurisdictions have a digital ID system in place, one (6%) has plans to implement one and 47% do not have a digital DI system in place. The adoption of digital identity solutions is a clear trend in the region, which could greatly facilitate efforts related to e-KYC, AML/CFT and even financial inclusion. The prevalence of sampled APAC jurisdictions utilising digital ID is far higher than in other regions: 82% of MENA and 64% of SSA sampled jurisdictions do not use a digital ID system in relation to KYC.

Figure 5.10: Types of digital identity systems used in e-KYC – APAC (N=17)



Note: N denotes the number of jurisdictions surveyed.

Most digital ID systems in jurisdictions that have deployed them are government-controlled and centralised (24%). However, some jurisdictions have adopted different approaches that include more participation from the private sector: 12% have chosen decentralised, privately controlled digital identity systems, while 12% have a mixed regime in place where centralised and decentralised solutions coexist.

Some specific examples of AML, e-KYC and digital identify initiatives from the surveyed jurisdictions are presented in **Table 5.4**.

Table 5.4: Examples of AML/e-KYC measures adopted by APAC regulators in response to COVID-19

REGULATOR	COVID-19 AML EFFORTS	DETAILS OF COVID-19 AML MEASURES
India	Issuing clear guidance on e-KYC and simplifying due diligence, including interactions with the DI system previously deployed	The Central Bank facilitated the use of simplified due diligence by allowing banks to: • obtain less information (for example not requiring information on the address or the occupation of the potential client), and/or seeking less robust verification of the customer's identity, and the purpose and intended nature of the business relationship • postpone the verification of a customer's identity.
Singapore	Increasing the integration of its robust digital identity system into the AML/KYC frameworks	The Monetary Authority of Singapore issued guidance in a circular called Use of MyInfo and CDD Measures for Non-Face-to-Face Business Relations (AMLD 01/2018). In situations where MyInfo is used, financial institutions will not be required to obtain physical documents to verify a customer's identity and will also not be expected to separately obtain a photograph of the customer.
Hong Kong	Facilitating the opening of accounts and the use of other services remotely, with remote on-boarding and simplified due-diligence	In February 2019, the HKMA released an updated circular on remote onboarding of individual customers. The guidance does not provide a specific checklist of actions to follow but does state that technology adopted for remote onboarding purposes should cover both identity authentication/verification and identity matching (for example facial recognition and liveness detection).
Australia	Facilitating AML and KYC procedures as a result of the COVID-19 pandemic with the issuance of clear guidance	Due to the pandemic, guidance was released to explain that there are other ways to fulfil KYC requirements, including: • using alternative proof of identity processes • using electronic copies to verify the identity of individual customers • relying on disclosure certificates to verify certain types of information about customers who are not individuals • relying on alternative proof of identity processes.

6. Regulatory innovation initiatives in APAC

6. Regulatory Innovation Initiatives in APAC

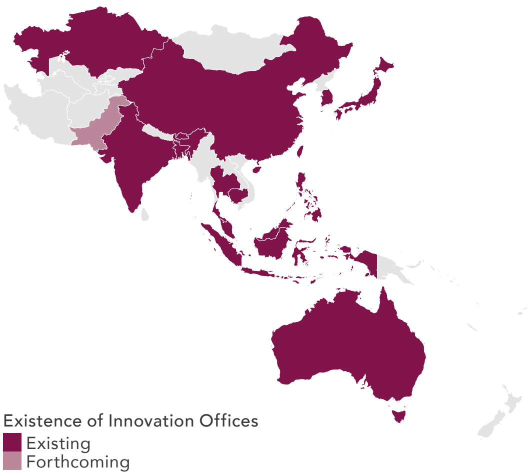
Regulators globally have responded to the challenge of balancing the benefits and risks of technology-enabled financial innovation and the increasing digitalisation of the global economy through regulatory innovation initiatives. These initiatives include innovation offices, regulatory sandboxes, and RegTech/SupTech programmes. This chapter sets out the current state of regulatory innovation initiatives across APAC.

Innovation offices in APAC

An innovation office is a dedicated function within a regulator that engages with and provides regulatory clarification to innovative financial services providers. This can help reduce regulatory uncertainty by providing a channel for innovators to engage in dialogue with regulators to better understand regulatory frameworks and their requirements.

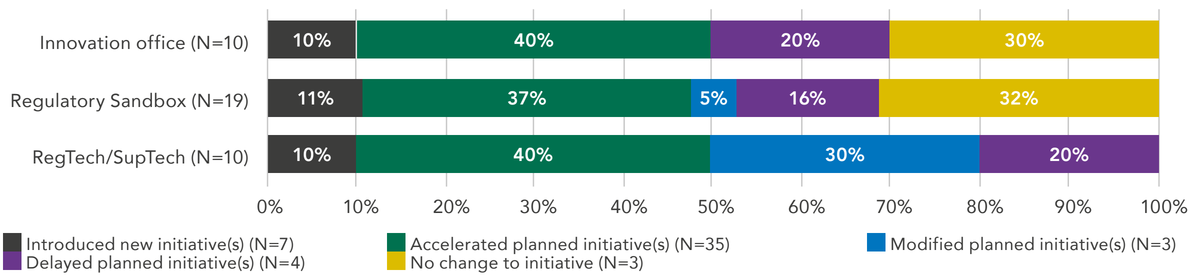
As shown in **Figure 6.1** there are currently 16 jurisdictions in APAC with at least one innovation office and one jurisdiction with one forthcoming. This represents a significant increase from 2019 when a study identified only nine innovation offices in APAC (CCAF and UNSGSA, 2019).

Figure 6.1: Innovation offices in APAC[7]



The increasing prevalence of innovation offices seems likely to continue, with 40% of sampled APAC jurisdictions that responded to the survey indicating that the COVID-19 pandemic has accelerated their planned innovation office initiatives (CCAF, WEF, and World Bank, 2020), as **Figure 6.2** shows. This is in addition to the 10% of surveyed regulatory authorities who reported introducing an innovation office during the pandemic.

Figure 6.2: The Impact of COVID-19 on regulatory innovation initiatives - APAC



Note: N refers to the number of regulators who responded across the APAC region and not just those from the sampled jurisdictions. Source (CCAF and World Bank, 2020).

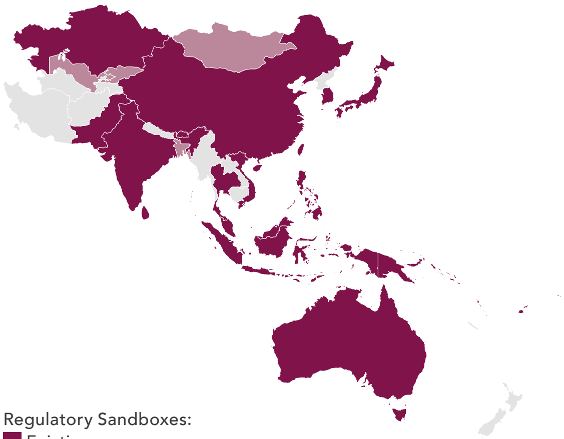
7 The jurisdictions with innovation offices in APAC are: Australia, Bangladesh, Bhutan, Cambodia, China, Hong Kong SAR China, India, Indonesia, Japan, Kazakhstan- Nur-Sultan (Astana), Republic of Korea, Malaysia, Philippines, Singapore, Taiwan China and Thailand.

Regulatory sandboxes in APAC

Regulatory sandboxes are formal regulatory programmes that allow market participants to test new financial services or models in the live market with real customers, subject to certain safeguards and oversight measures.

Figure 6.3 illustrates the prevalence of regulatory sandboxes across APAC. The findings identified 25 jurisdictions with at least one operational regulatory sandbox and four jurisdictions planning to introduce one.

Figure 6.3: Regulatory sandboxes in APAC[8]



As in the case of innovation offices, there has been nearly a 100% increase in regulatory sandboxes in samples over the last two years. In 2019, just 13 regulatory sandboxes were identified as operational (CCAF and UNSGSA, 2019).

The COVID-19 pandemic appears to have played a catalytic role in the establishment of regulatory sandboxes. As illustrated in **Figure 6.2**, 11% of respondents introduced a regulatory sandbox during the pandemic and 37% are accelerating a regulatory sandbox initiative during this period. Only 16% reported a delay in implementing a regulatory sandbox initiative due to the pandemic.

RegTech and SupTech initiatives in APAC

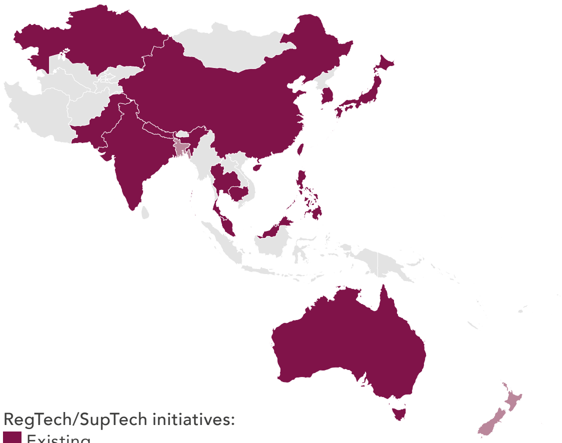
The use of technology to aid market participants in complying with regulatory requirements, as well as the use of supportive technology by regulators, is increasing globally. The terms 'RegTech' and 'SupTech' are defined in different ways by financial regulators and the wider financial industry.[9] For this study, these terms are used to refer to the use of technology by *regulators*. SupTech refers to the use of innovative technologies by regulators to tackle regulatory or supervisory challenges. It is a subset of RegTech, which includes any use of technology to match structured and unstructured data to information taxonomies or decision rules in a meaningful way to both regulators and regulated entities, to automate compliance or oversight processes. The two terms are used interchangeably in this study given their varying usage by regulators, and the potential for commonly adopted definitions, standards, and protocols between both.

Figure 6.4 shows that there are 15 jurisdictions in APAC with at least one active RegTech or SupTech initiative, with a further two planned. RegTech and SupTech initiatives have almost doubled in the last two years. CCAF and UNSGSA identified eight RegTech initiatives in APAC in 2019.

8 The jurisdictions with at least one regulatory sandbox are: Australia, Bhutan, Brunei Darussalam, China, Fiji Hong Kong SAR China, India, Indonesia, Japan, Kazakhstan- Nur-Sultan (Astana), Republic of Korea, Malaysia, Pakistan, Papua New Guinea, Philippines, Samoa, Singapore, Solomon Islands, Sri Lanka, Taiwan China, Thailand, Timor-Leste, Tonga, Vanuatu and Vietnam.

9 By way of example see: (CCAF and UNSGSA, 2019; FSB, 2020; Di Castri et al, 2018).

Figure 6.4: RegTech / SupTech initiatives in APAC[10]



RegTech/SupTech initiatives:
- Existing
- Forthcoming

10 The jurisdictions with at least one RegTech/SupTech initiative, based on publicly available information are: Australia, Brunei, China, Hong Kong SAR China, India, Japan, Kazakhstan, Republic of Korea, Malaysia, Nepal, Pakistan, Philippines, Singapore, Taiwan, and Thailand.

7. Identifying gaps, and understanding challenges in APAC

7. Identifying gaps, and understanding challenges in APAC

As outlined in the previous chapters, the regulatory approaches to FinTech in the APAC region are diverse. This chapter explores this variation in more detail and suggests some of the impacts that divergent approaches have on the FinTech market across the region.

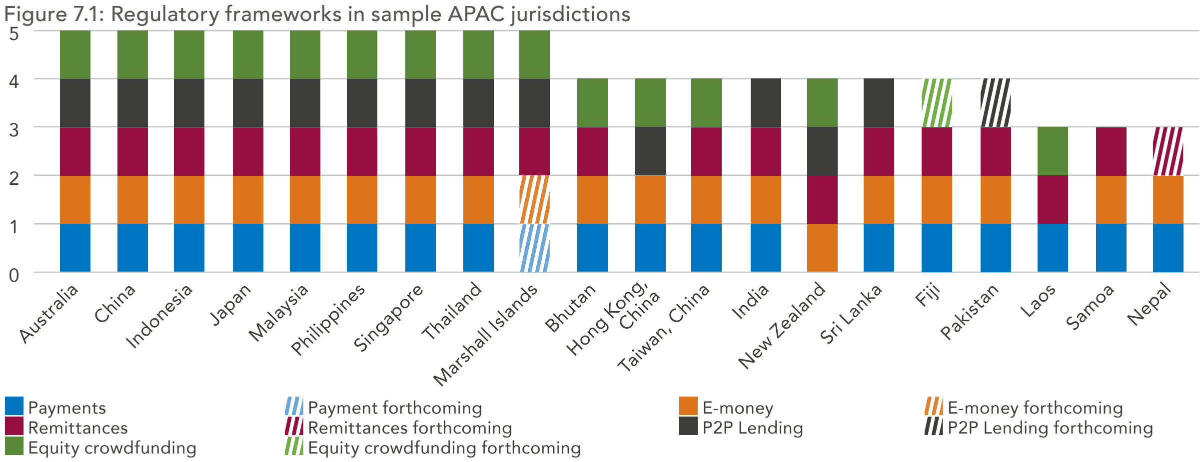
Uneven regulatory frameworks and innovation initiatives

Provision of frameworks for FinTech verticals

A jurisdiction-by-jurisdiction view of the prevalence of regulatory frameworks across the FinTech verticals researched in this study is presented in **Figure 7.1**. It should be noted that this Figure does not seek to 'rank' or 'score' different jurisdictions in their approach to regulating FinTech, but instead highlight the range of approaches to regulating FinTech within APAC.

The absence of regulatory frameworks can increase uncertainty for FinTech market participants. Having a framework in place can assure market participants of their obligations, although uncertainty can still exist if regulators make sudden or frequent changes to the regulatory framework. The lack of a framework can also lead to issues regarding financial conduct and consumer protection being overlooked. Ensuring there is a framework in place can reduce uncertainty about regulation as well as clarify who has regulatory remit for market oversight.

Figure 7.1: Regulatory frameworks in sample APAC jurisdictions



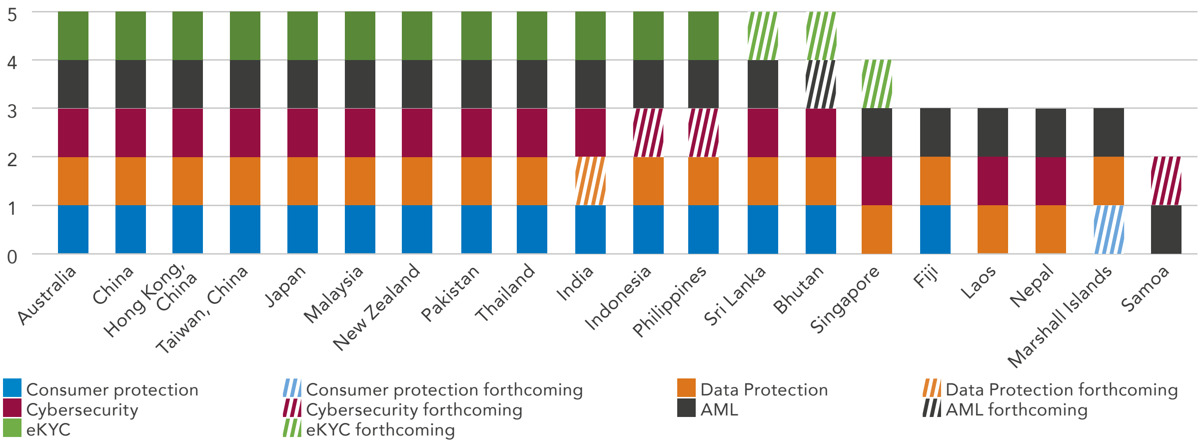
Note: We identify any regulatory framework in place (either general or specific) as a positive answer. Information accurate at the time of research completion.

Across the sampled APAC jurisdictions, payments, e-money and remittances have the greatest coverage, with general or specific frameworks for these verticals existing in 18, 17 and 18 jurisdictions respectively. There is a lack of frameworks for P2P lending, with only 13 jurisdictions having one in place; Pakistan is planning to introduce one in the future. In terms of ECF, 14 jurisdictions have an existing framework; Fiji is planning to introduce one soon. In total, four jurisdictions plan to introduce a further five frameworks across a variety of FinTech verticals.

The unevenness of the prevalence of frameworks across APAC jurisdictions is more pronounced at a sub-regional level. Most South Asian jurisdictions in the sample do not have an ECF framework in place.

There is a similar variation in cross-cutting regulatory frameworks across APAC, as shown in **Figure 7.2**. As with the analysis of regulatory frameworks, this is not an attempt to rank jurisdictions but to showcase the wide range of approaches within APAC.

Figure 7.2: Cross-Cutting Regulatory Frameworks in Sample APAC jurisdictions



Note: We identify if there is a framework or directive as a positive answer.

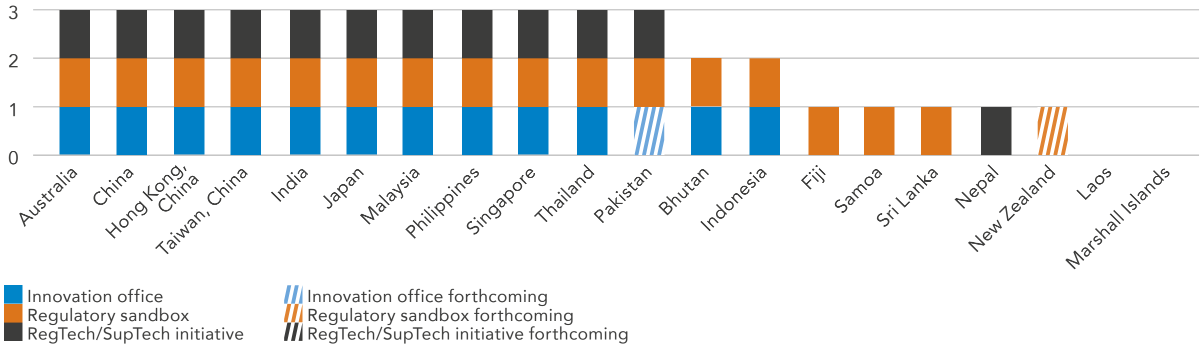
An AML framework is present in all sampled APAC jurisdictions, except Bhutan, which is planning to implement a framework in the future. Prevalence of data protection frameworks follows closely behind, appearing in 18 jurisdictions. The prevalence of regulatory frameworks across these verticals highlights their importance to regional regulators. The presence of e-KYC frameworks is lower, with only 12 jurisdictions having this in place, although four jurisdictions are planning to launch e-KYC frameworks in the future. Of the sampled APAC jurisdictions, Pakistan, Australia, Taiwan, China, Japan, Hong Kong, Thailand, New Zealand and Malaysia have frameworks in place for all investigated cross-sectoral issues.

The fact that most of the sampled jurisdictions have frameworks in place for AML and data protection is positive, as these are vital to allowing the FinTech market in APAC to continue to grow. Greater effort is needed, however, in ensuring more e-KYC frameworks are put in place, to enable broader dissemination of financial sector opportunities to firms and their customers. It is important to note, that cross-sectoral frameworks are often not under the remit of a single agency, and hence change can often be difficult and require coordination. However, if effective cross-cutting frameworks can be established this can significantly advance related regulatory objectives.

Increasing regulatory innovation initiatives

Chapter 6 analyses the development of regulatory innovation initiatives across APAC in detail. As seen in **Figure 6.2**, COVID-19 seems to have accelerated these efforts, with seven regulators from the region introducing new initiatives and 35 accelerating planned initiatives. **Figure 7.3** provides a jurisdiction-by-jurisdiction view of the regulatory innovation initiatives within our sample. Note that the figure looks at just the sampled jurisdictions, and not the whole APAC region as in **Chapter 6**.

Figure 7.3: Regulatory innovation initiatives in sampled MENA jurisdictions



Note: Information accurate at the time of research completion.

Regulatory sandboxes are the most common initiative employed by sampled APAC regulators, appearing in 16 jurisdictions and being planned in one jurisdiction. Innovation offices are in place across 12 jurisdictions, with one more forthcoming. Similarly, RegTech/SupTech initiatives are currently in place in 12 jurisdictions.

The presence of regulatory innovation initiatives can often be a driver for the growth and development of the FinTech market within a jurisdiction, contributing to an environment more conducive to innovation and providing easier access to the regulator. Four of the sampled jurisdictions have only one of the mentioned regulatory innovation initiatives in place. New Zealand is the only jurisdiction that does not currently have any of the initiatives, although they do have a forthcoming regulatory sandbox.

There is an increased need for the relevant stakeholders, such as FinTech firms and associations, to be able to engage with regulators as well as find the information related to their business model in DFS. A solution to address these needs may be the creation of innovation offices in the seven jurisdictions that do not have one. Innovation offices aim to be accessible and reachable for stakeholders, engaging with firms and providing information on the existing regulatory requirements, which in some cases can be difficult to find. They also provide greater market clarity and increase engagement between the regulator and firms, especially if there are resource constraints in attempting to create a regulatory sandbox.

Evidence of framework development and impact on the FinTech market

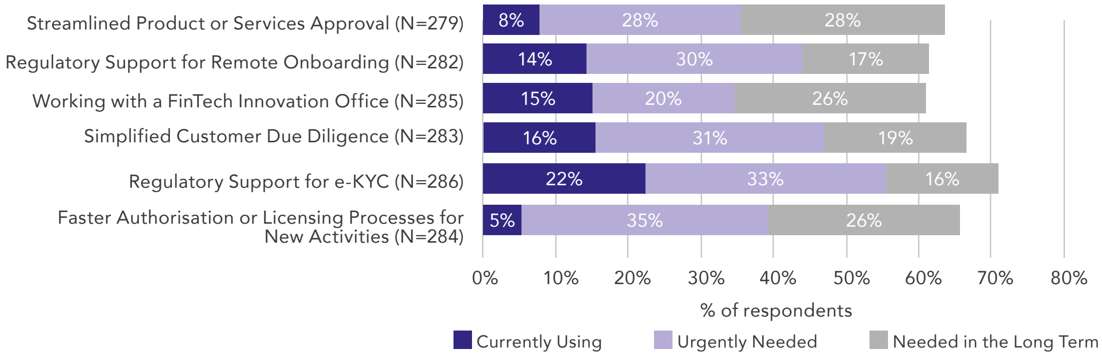
The relationship between the market for financial products and regulatory oversight is likely to be complex and non-linear. Some regulators prefer to adopt a "wait and see" approach, as described in **Chapter 3**, and thus ensure a regulatory framework is in place only after the market has developed. However, sometimes the development of a framework itself can create an increase in market activity. In the example of mobile money, there is evidence that greater overall regulatory clarity (as defined by an increase in the GSMA regulatory index) relates to an increase in the ownership of mobile money accounts (Klapper, et al, 2021). In this section, we combine the data of this study with the data from the 2nd Global Alternative Finance Market Benchmarking Report to evaluate if there is a relationship between the existence of a framework in a particular FinTech vertical and market activity.

The very existence of regulatory frameworks will not necessarily lead to an increase in market activity. The frameworks must also be effective and responsive to market developments, while also remaining true to their regulatory objectives and adequately resolving rising challenges.

In the Global COVID-19 FinTech Market Rapid Assessment Study, market participants in APAC had an opportunity to respond as to their needs in terms of the regulatory response to the COVID-19 pandemic, and regulatory innovation initiatives, as presented in **Figure 7.4**. The most urgent need (35%) was a faster authorisation or licencing process. Next was regulatory support for e-KYC (33%).

As noted in **Figure 7.2**, e-KYC frameworks were lagging across the APAC region and market participants consider e-KYC enablement as urgently needed.

Figure 7.4: Market responses on regulatory responses and innovation initiatives – APAC



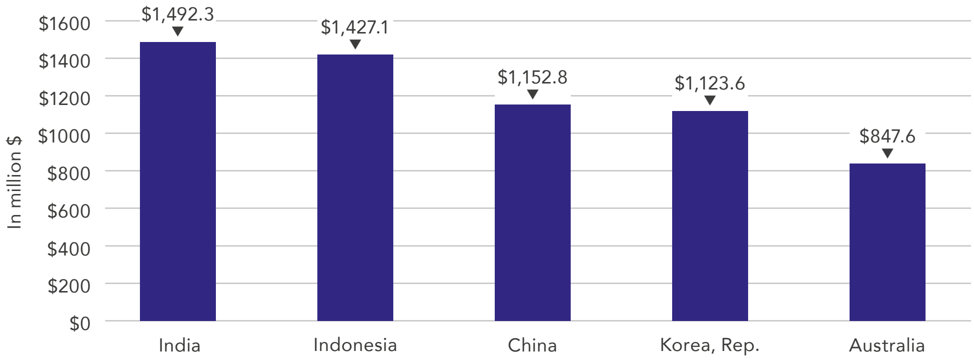
Notes: This is based on a survey of market participants and hence the N is the number of FinTech firms who thought the answer was significant. Note that "N/A" and "Unsure" responses have been omitted from this chart. Source: (CCAF, WEF and World Bank, 2020).

Recent data on alternative lending indicates that, with the exception of China, alternative lending activity is on the road to recovery in the APAC region, with online alterative finance (providing for both P2P and ECF models of alternative lending) platforms facilitating over $8.5 billion 2020 (CCAF 2021e). This is a decline of 6.5% from the peak in 2019, where activity reached $9.5 billion. Despite this, the scale of decline globally meant that the APAC region (excluding China) share of the alternative finance market increased from 5% in 2019 to 8% in 2020. It is important to note the rapid decline of alternative lending (mainly P2P lending) in China. A concentrated regulatory crackdown after complaints of fraud and platform collapse, combined with the impact of COVID-19, saw China's alternative lending fall from $84.4 billion in 2019 to just $1.2 billion in 2020 (CCAF 2021e).

Despite the dramatic decline of alternative lending in China, it was still the third-largest market in APAC in terms of digital lending in 2020, as seen in **Figure 7.5**. Even with the decreased activity in the region, P2P constituted 56% of total digital lending in the five jurisdictions identified in **Figure 7.5**, making it the largest type of alternative lending in the region. In 2019, P2P lending constituted 65% of the digital lending activity within the four jurisdictions from **Figure 7.5** who are part of our sample: this increased to 68% in 2020.

The P2P lending market alone was worth over $4.8 billion in APAC in 2020, with Indonesia and the Republic of Korea each accounting for over $1 billion of this activity. Both jurisdictions have established mandates that cover P2P lending activities, either through a bespoke or other existing regulatory framework. ECF activity also contributed $300 million in market activity in APAC, with Singapore, a long-standing leader in FinTech regulation, contributing $206 million of that activity. Notably, all sampled jurisdictions besides India have a framework in place for ECF.

Figure 7.5: Digital Lending in APAC 2020 – Top 5 Jurisdictions



Source: (CCAF, 2021d).

The data does not prove the causality of market development and regulatory framework; China exhibits a decline in market activity and development specifically due to regulatory frameworks becoming more stringent. Despite this, almost all sampled jurisdictions have implemented regulatory frameworks, either in response to a rising market or as a way to incentivise the growth of the market.

Challenges and factors impacting regulatory response to FinTech in APAC

Challenges and drivers of the uneven regulatory landscape

Regulators in APAC have identified a range of challenges in regulating FinTech, compared to more traditional financial services. These challenges may explain the variation in the prevalence of regulatory frameworks across APAC. **Table 7.1** is based on regulators' assessments of the impediments to effective supervision of FinTech in 2019.

Table 7.1: Regulators perception of impediments to effective regulation - APAC (N=15)

IMPEDIMENTS TO EFFECTIVE SUPERVISION	APAC
Limited technical expertise within the regulators	86%
Need to coordinate the activities of multiple regulators	79%
Limited funding / resources for the regulators	64%
Small size of firms/industry can't justify intense suprevision	57%
Regulator's juristiction over this activity is unclear or limited	71%
Lack of usable / reliable data on firm activities	7%
Other	50%

Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2019).

The most common impediment identified was regulator's limited FinTech technical expertise (85.7%), which was also the main concern for regulators in MENA and APAC. Knowledge and understanding of emerging technologies, business models, and the technical details of innovation can be challenging for regulators, who may also face concerns relating to resourcing and capacity. Limited technical expertise is likely to hinder the development of regulatory frameworks and enabling regulations.

Regulatory sandboxes are one of the tools available to regulators to understand the business models of innovative businesses, as well as being a means of allowing new and innovative business models to be tested in a controlled and supervised manner. Sandboxes can broaden regulatory understanding of products and risks and can expedite the registration process for firms that exhibit effective safeguards, controls and compliance practices.

Other significant challenges identified by regulators are the need to coordinate the activities of multiple regulators (78.6%), the lack of clarity over jurisdiction (71.4%) and limited funding/resources (64.3%). Regulatory coordination can be complicated and time-consuming, which may be particularly relevant to APAC as many jurisdictions appoint more than one regulator to oversee specific FinTech verticals. A lack of clarity over jurisdiction can detrimentally affect the regulator's ability to respond to market developments and develop effective frameworks and provisions. A lack of resources, meanwhile, can also have a profound impact on the ability of jurisdictions to enforce and implement regulations.

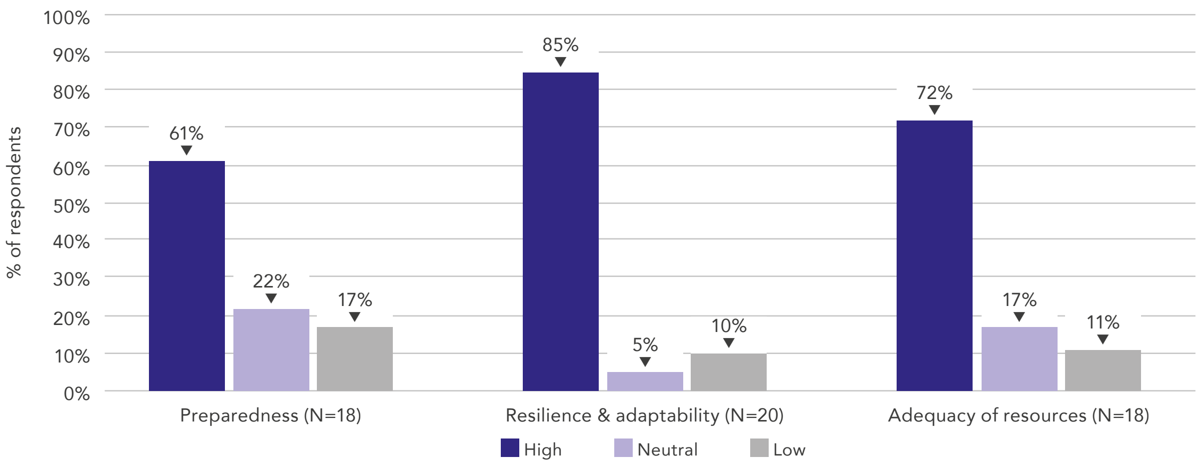
Only 7.1% of respondents consider the lack of usable/reliable data on firm activities as an impediment, indicating effective systems to capture, record and respond to this data. This could be conducive to developing appropriate responses to firm activity and market trends. It should also be noted that this figure for APAC is particularly low compared to MENA (37.5%) and SSA (20%).

Challenges and measures relating to the COVID-19 pandemic

Like the global regulatory community, APAC regulators had to respond to the challenge of the COVID-19 pandemic. **Figure 7.6** shows regulators' perceived levels of preparedness, resilience and adaptability, and adequacy of resources in the wake of COVID-19 in APAC. 85% of regulators indicated a high degree of resilience and adaptability to the initial impact of the pandemic. This is also reflected in the fact that more than half of the respondents introduced a range of new measures in response to COVID-19, as discussed in further detail below.

The APAC regulatory response indicating a higher belief in resilience and adaptability to the pandemic is higher than that in MENA (75%) and SSA (68%). APAC regulatory responses also indicate higher adequacy of resources to tackle the challenges created by the COVID-19 pandemic (72%) compared to those in MENA (55%) and SSA (35%). Similarly, APAC regulators also highlighted greater levels of preparedness (61%) relative to MENA (55%) and SSA (46%) (although this may be due to prior outbreaks of other contagious airborne diseases in APAC, which may have increased the preparedness of the region's regulators).

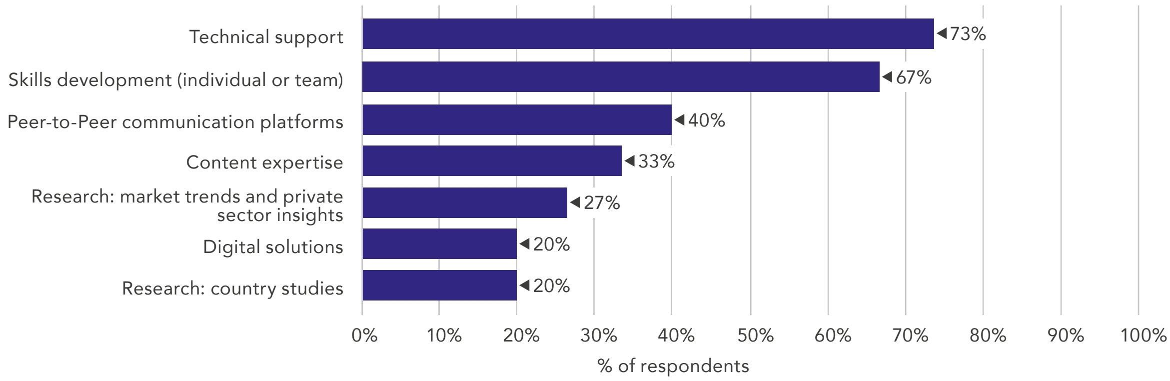
Figure 7.6: Perceived levels of preparedness, resilience and adaptability and adequacy of resources in the wake of COVID-19 – APAC



Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

Figure 7.7 shows the types of assistance regulators believe would benefit them most in supporting their work on FinTech, in response to COVID-19. Most (73%) of regulators that responded to the COVID-19 response survey in APAC considered technical support to be beneficial in supporting their work on FinTech in response to the pandemic, indicating a need for more subject-specific expertise and knowledge. This is similar to regulators' response in MENA (71%) and SSA (64%). The next most-identified type of assistance was skills development, which was selected by only 67% of APAC regulators but was the most popular choice for regulators in MENA (93%) and SSA (100%). Responding to developments within FinTech requires highly specialised knowledge and skills, particularly to understand emerging technologies and create appropriate regulatory responses and frameworks. A lack of these skills is likely to present a barrier for regulators seeking to create enabling frameworks for FinTech.

Figure 7.7: Types of assistance regulators would most benefit from in order to support their work on FinTech in light of COVID-19 - APAC (N=15)

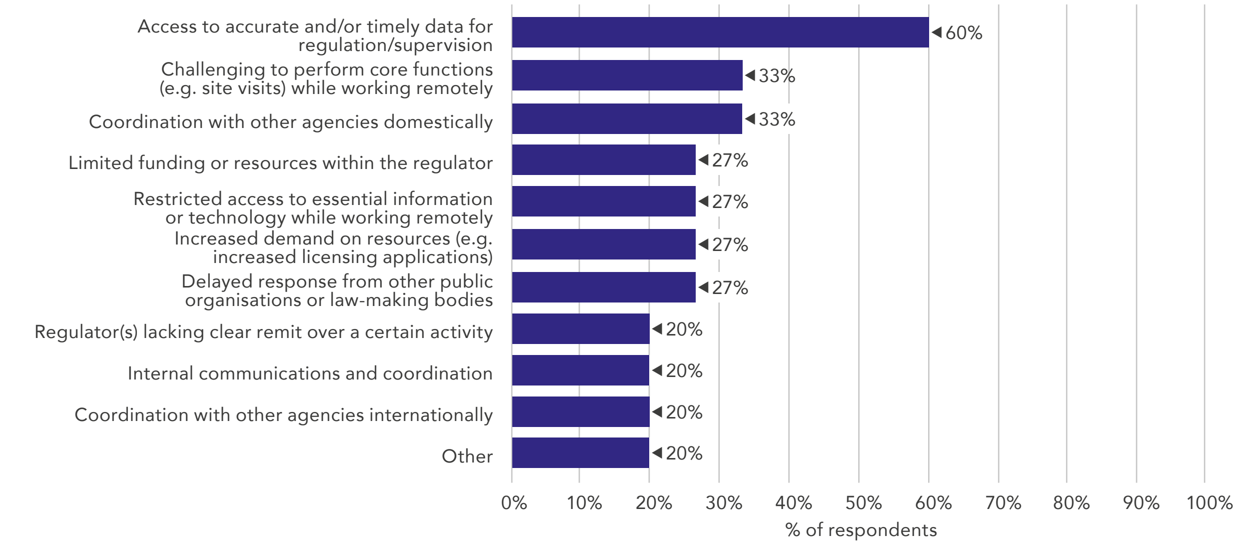


Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

In responding to COVID-19, there are a variety of internal challenges that regulators globally have faced. These challenges specific to APAC are identified in **Figure 7.8**. The most severe challenge identified by regulators in light of the COVID-19 pandemic was access to accurate and/or timely data for regulation/supervision (60%).

Other important challenges identified included coordination with other domestic agencies (33%) and difficulties in performing core functions while working remotely (33%). As markets responded rapidly to changes caused by the pandemic, it may have been difficult for regulators to keep up with developments. Both regulators and firms may have also been adversely affected by the number of staff working from home, impacting the timely and accurate provision of information to regulatory authorities and preventing supervisory visits.

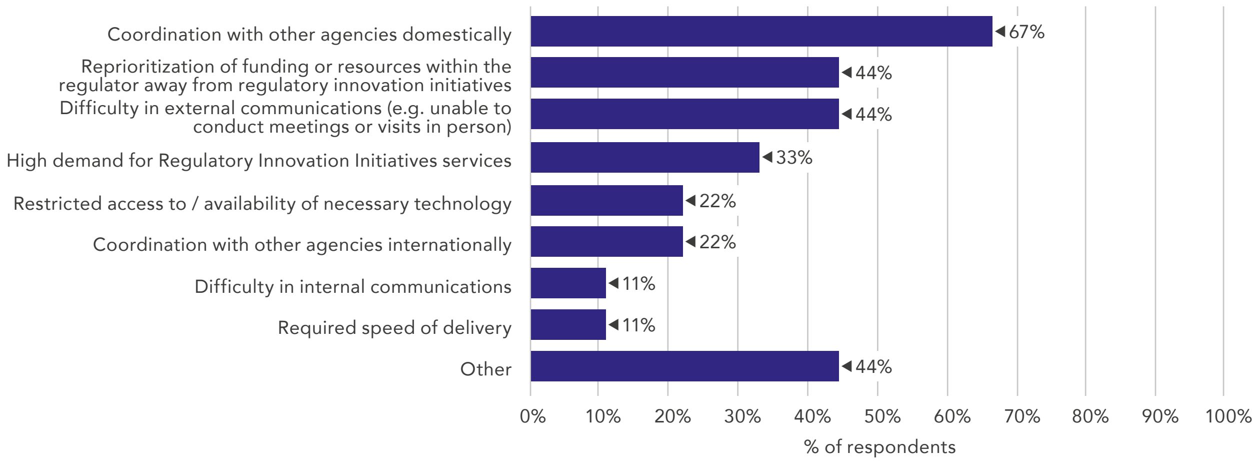
Figure 7.8: Internal challenges to developing regulatory responses to FinTech in light of COVID-19 - APAC (N=15)



Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

This study has previously highlighted that COVID-19 seems to have accelerated regulatory innovation initiatives in APAC jurisdictions, with seven regulators from the region introducing new initiatives and 35 regulators accelerating planned initiatives. Despite this, the pandemic has caused challenges directly relating to the implementation of these initiatives, as shown in **Figure 7.9**.

Figure 7.9: COVID-19 and the challenges for regulatory innovation – APAC (N=9)



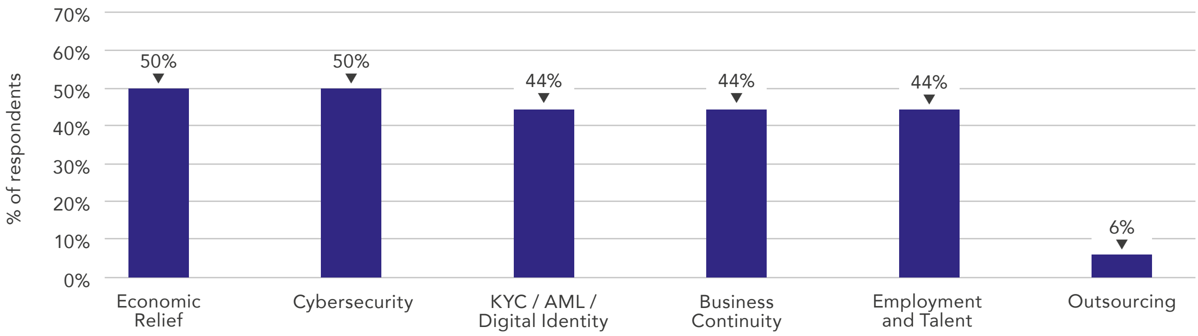
Note: N refers to number of regulators in APAC who responded to a survey. Source: (CCAF and World Bank, 2020).

The most common challenge cited by APAC survey respondents was coordination with other agencies domestically (67%), followed by difficulties in external communication (44%). These are particularly relevant as regulatory innovation initiatives often involve multiple regulatory authorities coordinating and working closely with each other and with participating firms.

Reprioritisation of funding was also highlighted as a significant challenge (44%). As regulators were required to devote greater resources to performing core supervisory functions, this would have left them with less capacity to focus on regulatory innovation initiatives.

Regulatory responses to the COVID-19 pandemic have been varied. A range of measures was implemented by APAC regulators, as shown in **Figure 7.10** Economic relief and cybersecurity measures were implemented by half of all regulators who responded to the survey. These actions included the reduction or elimination of transaction fees for mobile payments and increased guidance to improve cyber resilience. Equally notable are the measures implemented relating to AML and customer due diligence, with 44% of regulators introducing measures to ensure that KYC and other such processes could continue.

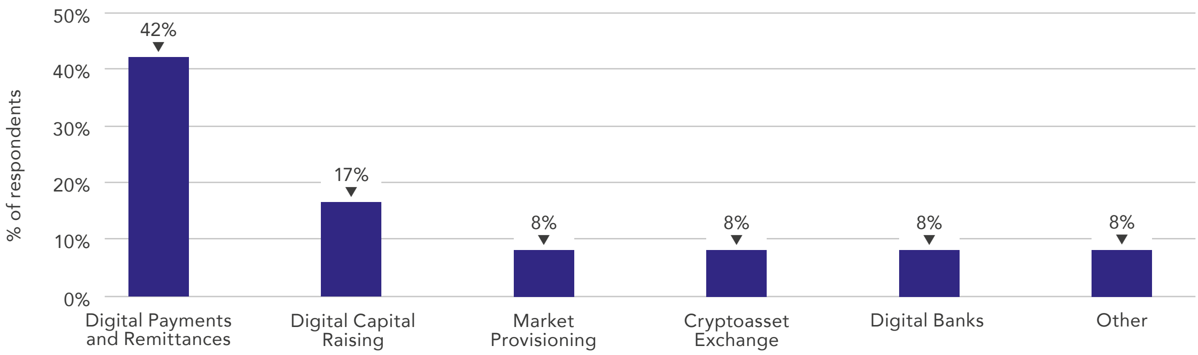
Figure 7.10: Instances of regulatory measures taken in the APAC region in light of COVID-19 (N=18)



Note: N refers to number of regulators in APAC who responded to a survey. Regulators took multiple measures across the different categories. Source: (CCAF and World Bank, 2020).

APAC regulators also introduced measures relating to specific FinTech verticals. As **Figure 7.11** shows, most of these measures were in the digital payments and remittances sector. This sector is not only large but was also particularly disrupted by the effects of the COVID-19 pandemic.

Figure 7.11: FinTech sector specific measures taken by regulators in the APAC region in light of COVID-19 (N=12)



Note: N denotes number of regulators in APAC who responded to the survey. Regulators took multiple measures across the different FinTech verticals. Source (CCAF and World Bank, 2020).

8. Concluding remarks and future research

8. Concluding remarks and future research

This study explored the regulatory approach to FinTech in APAC across a sample of jurisdictions to draw region-specific insights. It analysed sector-specific FinTech regulation, cross-cutting regulatory frameworks and regulatory innovation initiatives. The findings suggest that while there remain key areas to address, regulators in the region have taken active measures to advance the regulation of FinTech. The results further suggest that regulatory responses to FinTech have been catalysed by the COVID-19 pandemic.

In APAC, the findings indicate that there are fewer jurisdictions without a regulatory framework for the selected FinTech verticals compared to MENA and SSA. In terms of general and specific frameworks, the payments, e-money and remittances sectors have the widest coverage in APAC. In the P2P lending vertical, the region's approach is similar to MENA where both have half of the sampled jurisdictions with regulatory frameworks and explicitly defined regulatory mandates in place in contrast to SSA that has significantly less.

However, the study does reveal significant gaps in regulatory frameworks for specific FinTech verticals. In sampled APAC jurisdictions, the greatest instances of missing frameworks were in P2P lending (7), followed closely by ECF (6). In the latter case, the unevenness in frameworks is more pronounced at a sub-regional level – for example, most of the sampled South Asian jurisdictions lack an ECF framework. The situation may be changing, with four of the sampled jurisdictions planning to introduce five more regulatory frameworks across these FinTech verticals soon.

For the cross-sectoral verticals considered in APAC, regulatory frameworks are most prevalent in the AML and data protection verticals, with nearly complete coverage across the sample. In contrast, e-KYC had the greatest instances of missing regulatory frameworks (8). However, four of the sampled jurisdictions are planning to introduce e-KYC frameworks in the future. Despite this unevenness, sampled APAC jurisdictions still have a significantly higher proportion of e-KYC frameworks in place compared to MENA and SSA.

The mapping of regulatory innovation initiatives reveals an increase of nearly 100% in all initiatives compared to the results of the mapping conducted by CCAF in 2019 (as discussed in **Chapter 6**). The COVID-19 pandemic has also played a catalytic role in the introduction and acceleration of these initiatives in most of the sampled jurisdictions. Regulatory sandboxes are the most common initiative across the APAC sample, with 16 jurisdictions having at least one in place and one planned in another jurisdiction.

Looking ahead to the next few years, it is anticipated based on the findings that regulators will continue to actively shape the FinTech regulatory landscape. As jurisdictions introduce new or revise old frameworks and implement regulatory innovation initiatives, this will contribute to a decrease in the unevenness observed in APAC.

The study's findings revealed several areas that should be examined in future research. For example, the study suggests the need for a follow-up evaluation examining the effectiveness of the FinTech frameworks, and an assessment of how regulators should sequence the introduction of new FinTech regulatory approaches. This remains an important information gap for regulators seeking to balance competing regulatory objectives against challenges such as limited resources.

Digital financial infrastructure can advance or inhibit the effectiveness of regulatory provisions linked to digital identity, e-KYC and open banking. However, further research is required in APAC (as well as across MENA and SSA) on the interplay between digital infrastructure initiatives and efforts to create enabling regulatory frameworks (particularly requirements relating to digital identity, e-KYC and open banking), and in turn how this links to FinTech market development.

There are various cross-jurisdictional collaboration initiatives across APAC. The Asia Pacific FinTech Network (AFIN) is an example of a FinTech focused initiative. AFIN facilitates greater collaboration throughout the region and encourages cross-border innovation (Monetary Authority of Singapore, ASEAN Bankers Association, and International Finance Corporation, 2017; AFIN, 2021; FinTech Singapore, 2017). There are also initiatives targeting cross-regional collaboration in key FinTech sectors, typically within regional sub-groups. For instance, the Association of Southeast Asian Nations (ASEAN) established a Working Committee on Payment and Settlement Systems (WC-PSS) and is also exploring the feasibility of interoperable QR codes to promote the use of innovative retail payment instruments across the ASEAN region (AFI, 2020a). Although not in this study's scope, these initiatives are welcome considering the transboundary nature of FinTech activity, which means that cross-jurisdictional regulatory coordination is often required for effective regulation. It is suggested that future research investigate the effectiveness of these initiatives in meeting the objective of cross-jurisdictional collaboration and related impact on the regulation and supervision of FinTech.

The final area observed to be rapidly expanding, and that requires examination is Islamic FinTech, which has emerged as a distinct business model. The study's findings indicate that several of the sampled APAC jurisdictions have already developed distinct Islamic finance frameworks. Additionally, two jurisdictions, Malaysia and Indonesia, are named among the top five jurisdictions in the Islamic FinTech ecosystem in terms of estimated transaction volumes, alongside Saudi Arabia and UAE (Dinar Standard and Elipses, 2021). Considering the prominence of this sector in several of the sampled APAC (and MENA) jurisdictions, it is suggested that future research explore the ongoing development of Islamic finance regulatory approaches, both regionally and cross-regionally, under the direction of the Islamic Financial Services Board (IFSB).

9. The regulatory approach to FinTech in India

9. The regulatory approach to FinTech in India

India occupies the greater part of South Asia with an estimated area of 3.287 million Km^2 It is the second most populous country with a population of approximately 1.3 Bn (India, 2022). In 2021 its unbanked population was estimated at 20% (Global Finance, 2021). In the same year its literacy rate was reported as 74.04% (Census of India, 2021) and an internet penetration rate of 34%.

India is one of the fastest-growing FinTech markets globally, and has the third-largest FinTech ecosystem, with 26 disclosed unicorns[11] and an 87% FinTech adoption rate.[12] The average across 27 developed and emerging markets in Africa, Latin America, and South Asia is 64% (Catalyst Fund and Briter Bridges, 2021). Despite its rapid FinTech development, India has one of the world's largest unbanked populations comprising 190 million people (Demirguc-Kunt, Klapper, Singer, Ansar and Hess, 2018). Financial inclusion and digital infrastructure have been some of the key focus areas of the government and regulators in India (Reserve Bank of India, 2021e).

India's regulatory approach has been positive and supportive of the development of FinTech as a means to achieving regulatory objectives including financial inclusion. The primary regulators for the FinTech sector in India are the Reserve Bank of India (RBI), and the Securities and Exchange Board of India (SEBI).[13] The RBI is responsible for banking activities, while SEBI oversees securities. In January 2022, the RBI announced plans to establish a separate FinTech department by including its financial technology unit within the Department of Payment and Settlement Systems (DPSS). The new department is being developed to respond to the sector's rapidly changing landscape and will be responsible for promoting innovation, identifying challenges and opportunities to grow the sector, as well as building mechanisms for addressing challenges promptly (The Economic Times, 2022).

A notable development in India's regulatory approach was the Government of India's establishment of an International Financial Services Centres Authority (IFSCA) in April 2020. IFSCA is a unified regulatory body for the development and regulation of financial products and services, and financial institutions in the International Financial Services Centre (IFSC) in India (IFSCA, 2020a). IFSCA combines the regulatory powers of RBI, SEBI, Insurance Regulatory and Development Authority of India (IRDAI) and the Pension Fund Regulatory and Development Authority (PFRDA) (CCAF, 2021e). Before the establishment of IFSCA, it was the remit of domestic financial regulators to regulate the financial sector in IFSC. The stated objective of IFSCA is to provide a holistic vision to ease the process of doing business in IFSC and to offer a world-class regulatory environment (IFSCA, 2020a).

The RBI has also promoted the National Payment Corporation of India (NPCI) as responsible for spearheading digital payments. NPCI is an initiative of RBI and the Indian Banks' Association (IBA) under the provisions of the Payment and Settlement Systems Act, 2007. It is empowered to create a robust payment and settlement infrastructure in India (NPCI, 2021a) and

11 A unicorn is a privately held startup company valued at over $1 billion.

12 Adoption rate can be represented as the number of members of a society who start using a new technology or innovation during a specific period.

13 India also has other regulators who have jurisdiction over the insurance and pension sectors, namely the Insurance Regulatory and Development Authority of India (IRDAI) and Pension Fund Regulatory and Development Authority (PFRDA).

prescribes regulations and guidelines concerning the Unified Payments Interface (UPI) (NPCI, 2021a). India's Unified Payments Interface (UPI) is a platform that integrates multiple bank accounts into a single mobile application, merging various banking features to enable seamless peer-to-peer fund routing and merchant payments under one umbrella. It is being developed as a scalable payment platform to support the digital payments ecosystem in India.

India's multi-faceted regulatory approach towards innovation was articulated by the RBI's Deputy Governor, Shri T Rabi Sankar, during the Global FinTech Festival in 2021 (Sankar, 2021). India's approach has been to "create the environment where digital innovation can thrive" by establishing "the basic infrastructural entities which provided the rails on which innovative products can run". He further explained that regulation is employed to "actively facilitate wider participation to include non-banks (for example, mobile wallets issued by non-banks) and increase interoperability among different payment systems" (Sankar, 2021).

Regulators often apply existing regulatory frameworks to new innovative business models, either by focusing on the underlying economic function and risks of those activities, or on individual organisations, and increasingly on both. They are also adjusting existing regulatory frameworks to accommodate new market entrants and re-engineering existing processes to allow greater adoption of new technologies to flourish. Another approach has been to create brand new regulatory frameworks or regulations to include (or prohibit) explicit and specific FinTech activities such as a framework for P2P lending in 2017 and a framework for invoice-based lending in 2018 (Reserve Bank of India, 2021a).

Several regulatory initiatives have been introduced to stimulate a 'less-cash economy' and to support financial inclusion objectives. FinTech-specific regulatory initiatives introduced to date, include regulatory sandboxes and innovation hubs (Dar, Viswanath, Suri, Ashok and Mukul, 2021). The RBI sandbox had two cohorts launched in 2020 that focused on retail payments and cross border payments. These have supported 6 and 8 firms respectively. In April 2020, IRDAI approved 16 applications by life and non-life insurers to test specific products in the sandbox (BFSI, 2021).[14] Regulators in India are eager to identify regulatory barriers to innovation and to accommodate new FinTech models by amending existing regulations to facilitate market needs (CCAF, 2021e).

There were two significant regulatory developments that have evolved gradually in recent years. Firstly, RBI, after initially following a 'light-touch' approach to FinTech regulation has been increasingly moving towards a full-regulation model (Ahluwalia, Malhotra and Pareek, 2021). An important development in this regard has been in the digital payments sector, with the introduction of a full-fledged regulatory regime for payment aggregators (Chambers, 2021). Secondly, RBI has indicated its intention to emphasize efforts on protecting consumer data and preventing digital fraud (Ahluwalia, 2021).

Figure CS1.1 summarises the regulatory approach to FinTech in India across key business models (verticals). In comparison with the APAC region, the majority of FinTech verticals in India have general regulatory frameworks or laws that apply to all the sectors reviewed. There are some differences regarding ECF and P2P lending: India has prohibited ECF and created FinTech-specific regulatory frameworks for P2P lending, while all other sampled APAC jurisdictions have general sector frameworks.

14 The sandbox is reported to have received 173 applications in its first cohort and 185 in the second. See: (Business Standard, 2021).

Figure CS1.1: India regulatory frameworks in FinTech verticals

	PAYMENTS	E-MONEY	REMITTANCES	EQUITY CROWDFUNDING	PEER-TO-PEER
India	General Sector Framework	General Sector Framework	General Sector Framework	Prohibited	Fintech Specific Framework
Region Mode	General Sector Framework	General Sector Framework	General Sector Framework	General Sector Framework	General Sector Framework

Figure CS1.2 shows that the cross-sectional areas addressed within India's regulatory frameworks are similar to those commonly addressed in APAC. India also has financial services-specific regulatory laws/frameworks for cybersecurity and consumer protection, which are similar to the commonly adopted approach in APAC. However, India's approach to regulating cross-sectional areas differs in specific ways from those commonly adopted in APAC. For example, India has yet to enact a general data protection regulatory framework. A comprehensive data protection bill, The Data Protection Bill 2019 (previously called The Personal Data Protection Bill 2019) is currently pending approval before the Indian parliament (CCAF, 2021e). In most of the sampled APAC jurisdictions, regulators have implemented financial services specific regulatory laws/ frameworks.

Figure CS1.2: India cross-sectional regulatory frameworks[15]

	DATA PROTECTION	CYBERSECURITY	CONSUMER PROTECTION	OPEN BANKING
India	Law/Regulatory Framework in Development	Financial Services Specific Law/ Framework	Financial Services Specific Law/ Framework	Financial Services Specific Law/ Framework*
Region Mode	Financial Services Specific Law/ Framework	Financial Services Specific Law/ Framework	Financial Services Specific Law/ Framework	Unregulated

Note: India's approach has been to create rules and initiatives that focus on 'key components' that are a pre-requisite to open banking In this way India is paving the necessary road towards formal open banking interventions. Initiatives that are currently being pursued includes clarity on data registries- defining who, how and what data can be stored (within a government entity sense) and further refining account aggregation rules and supervision.

Examples of positive regulatory practices in India

Digital infrastructure

India offers some noteworthy examples of digital infrastructure initiatives. A renowned example is India Stack, a group of technologies that enables digital identity authentication, transfer of money, and the sharing of documents and data. India Stack comprises three infrastructure systems: a comprehensive digital identity, a digital payments infrastructure built by the National Payments Corporation of India (NPCI), and a data-management system (Carrière-Swallow, Haksar & Patnam, 2021). One of the key objectives of India Stack is to provide greater access to digital finance in an economy where retail transactions are still predominantly cash-based (Carrière-Swallow, Haksar & Patnam, 2021). A study from the 2020 McKinsey Global Payments Report estimated that 89% of the transactions in India is cash-based (McKinsey & Company, 2020). The introduction of a data-management system could reduce some of the risks related to privacy and identity theft arising from the more widespread sharing of data, for example in open-banking applications (Carrière-Swallow, Haksar & Patnam, 2021).

15 India's approach has been to create rules and initiatives that focus on 'key components' that are a pre-requisite to open banking. In this way India is paving the necessary road towards formal open banking interventions. Initiatives that are currently being pursued includes clarity on data registries- defining who, how and what data can be stored (within a government entity sense) and further refining account aggregation rules and supervision.

As a part of the digital infrastructure, India also has Aadhar. Aadhar is a unique biometric identification system that employs a random 12-digit number (Government of India, 2021). Aadhar allows the public to access government digital services thereby improving the availability and transparency of social payments including financial assistance to those in need (Government of India, 2021). FinTechs can verify customer identity using the Aadhar number, together with a fingerprint and/or iris scan. FinTechs can rely on Aadhaar authentication to confirm identity without additional verification measures, thus simplifying and accelerating the customer due diligence process (FIGI, 2021). Non-banking institutions, including FinTechs, are required to apply for an Aadhaar e-KYC Authentication Licence (The Banking & Finance, 2021). However, a limited number of services are currently restricted from using Aadhar as a mandatory KYC document and permitted banks can access Aadhaar only with the consent of the account holder (Supreme Court of India, 2018).

There are also ongoing digital infrastructure initiatives in the payments sector. To streamline the QR code infrastructure, RBI decided, in October 2020, to maintain interoperability between two existing QR codes (UPI QR code and Bharat QR code) (CCAF, 2021e). Additionally, RBI also mandated all Payment System Operators (PSO) using proprietary QR codes to shift to one or more of the interoperable QR codes. This migration process is due for completion before 31 March 2022 (CCAF, 2021e).

Regulatory sandboxes

In November 2019, RBI launched a regulatory sandbox to promote orderly, responsible and efficient innovation in financial services, and to bring benefits to consumers. As of 2021, RBI had announced four regulatory sandbox cohorts, one each relating to retail payments, cross-border payments, MSME lending and financial fraud. RBI also established the Reserve Bank Innovation Hub (RBIH) to support and promote cross-sectoral innovation in FinTech sectors by creating an enabling ecosystem bringing together academics, technology, finance, and regulators (Sankar, 2021). Some examples of key business activities included in the RBI's regulatory sandbox are payments, remittances, marketplace lending, digital KYC, digital identification, and wealth management (Reserve Bank of India, 2021f).

Other regulatory agencies in India have also launched regulatory sandboxes covering their sectors. For example, IRDAI created a regulatory sandbox to facilitate innovation in the insurance sector in July 2019 and in the same year, SEBI created an Innovation Sandbox Framework to enable FinTech firms to conduct 'offline testing' of their products or services based on market data provided by stock exchanges, depositories, qualified registrars and share transfer agents (IRDAI, 2020; CCAF, 2021e). In 2021, SEBI launched an innovation sandbox web portal, where FinTech firms and individuals can leverage the test environment for 'offline testing' (ETBFSI, 2021). IFSCA also launched its regulatory sandbox initiative in 2020 (IFSCA, 2020b). The IFSCA sandbox enables FinTech firms to operate in the capital markets, banking, insurance, and financial services with certain facilities and flexibilities to experiment in a live environment with a limited set of real customers and within a specified time frame (Government of India, 2020).

Data sharing

In 2016, RBI established a new licensed entity called Account Aggregator (AA) to facilitate data sharing. AA acts as an intermediary between a Financial Information Provider (FIP), such as a bank, banking company, insurance company, etc. and Financial Information User (FIU), which are entities registered with, and regulated by, any financial sector regulator (Rao, 2021). AA leverages appropriate APIs to enable the flow of information. It is a regulatory initiative in India that combines prescriptive and facilitative approaches and is in its early stages of development (Rao, 2021).[16]

P2P lending

India has a financial service-specific regulatory framework for P2P lending, a departure from most sampled APAC jurisdictions. The Master Directions – Non-Banking Financial Company (NBFC) – Peer to Peer Lending Platform Directions, 2017 provide a framework for the registration and operation of an NBFC that offers a P2P lending platform (Reserve Bank of India, 2021a). These platforms can also conduct activities relating to debt crowdfunding. The Master Directions framework sets out the registration process, the scope of activities, capped exposure, and operational guidelines (Reserve Bank of India, 2021a).

Key challenges

There are four key regulatory challenges for the Indian regulators as summarised below:

Table 9.1: Summary of challenges, India

AREA	SUMMARY OF CHALLENGE
Fragmented regulatory approach	• The absence of a consolidated set of regulations governing FinTech sectors in India makes it challenging for FinTech firms to navigate the regulatory landscape (Ahluwalia, Malhotra and Pareek, 2021). • Multiple regulators in India have their own sandboxes covering various topics (CCAF, 2021e).
Data protection	• India does not currently have national legislation that governs data protection or privacy. Regulation of data protection is fragmented, with provisions covering aspects of data protection captured in different pieces of legislation. The principal provision is drawn from Article 21 of the Indian Constitution and the Supreme Court of India ruled that personal data is recognized as a fundamental right under this Article (Supreme Court of India, 2018; India, 1949). • In December 2021, the Joint Parliamentary Committee submitted its report on the Data Protection Bill 2019 to the Indian Parliament after two years of deliberation (India, 2019; Lok Sabha Secretariat, 2021).
Digital lending	• India lacks clarity in its digital lending regulatory framework, although there is a dedicated framework for P2P lending. Gaps in other forms of digital lending frameworks have led to the rise of consumer protection issues in digital lending (CCAF, 2021e). • In January 2021, RBI established a digital lending Working Group (WG) to address this issue and to develop regulations for the sector (Reserve Bank of India, 2021d). One of the WG's recommendations was that a Self-Regulatory Organisation (SRO) be established to cover the participants in the digital lending ecosystem.
Concerns about the effectiveness of activity-based regulation	• The RBI's Deputy Governor explained in a 2021 speech that activity-based regulation might be less effective than entity-based regulation when dealing with the financial activities of big tech firms (Sankar, 2021). This statement came at a time when new technology giants, including WhatsApp and Apple, are looking to be a part of India's payment system ecosystem (The Times of India, 2021).

16 Prescriptive approach is described as regulators requiring banks to share customer-permissioned data and requiring third party users to register with regulatory authorities while facilitative approach is described as regulators issuing guidance and recommended standards and releasing open API standards and technical specifications.

10. The regulatory approach to FinTech in Indonesia

10. The Regulatory approach to FinTech in Indonesia

Indonesia has the tenth largest global economy in terms of purchasing power parity, is the fourth most populous nation in the world and is expected to become the fourth-largest economy by 2030 (WCA, 2021). Despite this, Indonesia currently has a significant underbanked or unbanked population. According to a CCAF study, 18% of the adult population in Indonesia is unbanked and 50% are underbanked (CCAF, 2021a).

The key FinTech regulators in this jurisdiction are the Bank of Indonesia (BI) and the Indonesia Financial Services Authority (Otoritas Jasa Keuangan/ "OJK"). They have joint responsibility for FinTech, with BI having responsibility for monetary policy and financial stability matters, as well as payment-related activities including e-money, while OJK is responsible for other financial activities beyond payments, including P2P lending and ECF (AFI, 2020a).

In addition to these regulatory entities, OJK appointed the Indonesian FinTech Association (AFTECH) as the main association to represent digital financial innovation firms in Indonesia. AFTECH was established by key industry players in 2016 as a separate entity to support BI and OJK in creating business-friendly regulations for the FinTech industry and driving the National Strategy for Financial Inclusion (NSFI) (AFI, 2020a). OJK indicated that it will also employ AFTECH as a monitoring body, to enforce codes of conduct and ethics for FinTech players in the Indonesian markets (OJK 2018a; OJK 2019). As of 2021, AFTECH has a member base of nearly 335 FinTech firms, including eight financial institutions and seven technology partners (FinTech Indonesia, 2021).

Aside from this, the Indonesian RegTech and Legaltech Association (IRLA) was founded in 2017. It was established to enable collaboration between any institution engaged in technological innovation in the regulatory or legal space (IRLA, 2021). Both AFTECH and IRLA are categorised as SROs (Self-Regulatory Organizations), with the ability to create and implement stand-alone industry regulations and standards, while high-level regulatory guidance is driven by the main regulatory entities, BI and OJK (OJK, 2021a). Overall, these FinTech/industry associations can be said to play a 'soft' role in the development of FinTech policy.

Indonesia's commitment to creating an enabling FinTech environment was highlighted by the opening remarks made by the president of Indonesia, Joko Widodo, at the 2018 annual plenary meeting of IMF-WBG held in Indonesia and subsequently captured in the OJK 'Digital Finance Innovation Roadmap' and Action Plan 2020-2024 (World Bank and International Monetary Fund, 2021; OJK, 2020a). He pointed out that friendly and soft regulation could accelerate innovation by preventing the government from excessively intervening in the market and enabling investors to implement joint experiments with service operators in a controlled manner. He describes this approach, as a 'light touch and safe harbour', suggesting it was the best approach to adopt in response to the wave of innovation (World Bank and International Monetary Fund 2021). This approach aligns with Indonesia's overall regulatory strategy to balance innovation with the integrity of the financial market and customer protection (Batunanggar 2019). The executive director of OJK's Financial Innovation Group, Triyono Gani, also stated that adopting this approach would encourage responsible innovation that maximises customer protection, risk management and security (Rahman 2020).

BI and OJK have adopted a 'test and learn' approach to the implementation of regulatory sandboxes for digital finance innovation in

Indonesia. BI launched its regulatory sandbox in 2017, while OJK launched its in 2018. Both BI and OJK require FinTech firms to pass through their respective regulatory sandboxes before launching their products. (OJK 2018a; Bank Indonesia 2017). FinTech's seeking to test in the OJK regulatory sandbox are required to follow three key steps. The first is to submit documentation to OJK to verify whether they meet the necessary criteria to gain admission to the regulatory sandbox. Second, they must test their business within the sandbox for up to one year (with the option to extend for another six months). Third, they are required to register their business with the OJK, assuming their testing phase was successful and that they receive a recommendation to register their service with OJK (Batunanggar 2019). In principle, the BI regulatory sandbox process is similar to that of OJK; the key objective being to assess whether FinTech firms are ready to bring their product to the market (Bakar 2019). This 'test and learn' approach enables BI and OJK to understand and regulate FinTech business models more effectively.

In October 2020, the Indonesian House of Representatives ratified a Bill (widely known as the Omnibus Law) aimed at greater job creation by amending 76 laws to bolster investment in Indonesian businesses. The amendments simplify business licensing procedures and change existing manpower laws (Indonesian Labour Law No 13/2003 on manpower, which includes, but is not limited to, contracting and outsourcing). The Omnibus Law includes amendments that are particularly important for the regulation of FinTech. For example, Peraturan Bank Indonesia (PBI) No. 22 on payment systems (PBI 22) in the Omnibus Law classifies payment system operators into payment services operators (PJP), comprising banks or non-bank entities that facilitate payment transactions, and payment system infrastructure operators (PIP) that provide the infrastructure to facilitate the transaction of funds. The Law also introduces a shift from entity-based to activity-based regulation (ASEAN 2021; Vantage Asia 2021; Bank Indonesia 2020). The Omnibus Law also includes important changes relating to P2P and ECF activities, as explained below.

Regarding digital banking, OJK Regulation No. 12/2021 (effective from 31 October 2021) on commercial banks, simplified and accelerated the licensing procedure for the establishment of new banks. It also introduced some hurdles for establishing new banks by increasing the minimum capital requirement to IDR 10 trillion ($0.7 billion). This provision applies only to newly established commercial banks. It does not apply to existing commercial banks, intermediary banks, and commercial banks resulting from corporate actions of merger, consolidation, acquisition, integration or conversion (OJK 2021e, Chapter IV). This provision applies to FinTechs that provide digital banking services, as the scope of the OJK regulation extends to banks that operate digitally with or without physical offices (OJK 2021e, Chapter IV).

Figure CS2.1 below outlines the regulatory approach to FinTech in Indonesia across key verticals. Unlike the other sampled APAC jurisdictions, which usually regulate the various FinTech sectors through general regulatory frameworks or laws applying to the sector, Indonesia has created FinTech specific regulatory frameworks or laws for all the sectors reviewed.

Figure CS2.1: Indonesia regulatory frameworks in FinTech verticals

	PAYMENTS	E-MONEY	REMITTANCES	EQUITY CROWDFUNDING	PEER-TO-PEER
Indonesia	Fintech Specific Framework	Fintech Specific Framework	Fintech Specific Framework	Fintech Specific Framework	Fintech Specific Framework
Region Mode	General Sector Framework	General Sector Framework	General Sector Framework	General Sector Framework	General Sector Framework

From **Figure CS2.2**, it can be seen that the cross-sectional areas addressed under Indonesia's regulatory frameworks are similar to those commonly addressed in APAC. Indonesia also has financial-services-specific regulatory frameworks/laws for data and consumer protection, which are similar to other common regulatory practices in APAC. However, Indonesia's approach to regulating cross-sectional areas differs in specific ways from those commonly adopted by the other sampled APAC jurisdictions, for example, Indonesia is yet to implement a specific cybersecurity regulatory framework (Buncsi 2017). In 2019, the House of Representatives (Dewan Perwakilan Rakyat, DPR) and the Indonesian National Cyber and Crypto Agency (Badan Siber dan Sandi Negara, BSSN) drafted a bill to serve as the umbrella for all cybersecurity laws in Indonesia, but it was later dropped as it lacked input from other government institutions and the private sector (Anjani 2021). However, despite data security concerns, BI is in the process of developing a regulatory framework for open banking to boost financial inclusion (Akhlas 2020). BI published a blueprint in 2019 for the future development of the Indonesia Payment Gateway System (SPI, Sistem Pembayaran Indonesia), and in one of its top five initiatives, it includes how BI would support open banking implementation through open API standardisation (Bank Indonesia 2019; Aryaputri 2021).

According to OJK's Financial Sector Master Plan 2021–2025 (MPSJKI, Master Plan Sektor Jasa Keuangan 2021–2025), "innovation and digital financial transformation" is identified as one of the three pillars required to enhance Indonesia's financial services sector's resilience and competitiveness. Within the "digital transformation acceleration" pillar, Indonesia places a strong emphasis on developing a supportive regulatory framework to advance the digital financial sector's ecosystem (OJK 2020b).

Figure CS2.2: Indonesia cross-sectional regulatory frameworks

	DATA PROTECTION	CYBERSECURITY	CONSUMER PROTECTION	OPEN BANKING
Indonesia	Financial Services Specific Law/ Framework	Law/Regulatory Framework in Development	Financial Services Specific Law/ Framework	Law/Regulatory Framework in Development
Region Mode	Financial Services Specific Law/ Framework	Financial Services Specific Law/ Framework	Financial Services Specific Law/ Framework	Unregulated

Examples of positive practices in Indonesia

Regulatory innovation initiatives

In August 2018, the OJK Innovation Centre for Digital Technology, known as "OJK Infinity" was launched (OJK, 2021a). OJK Infinity has three roles — to facilitate a regulatory sandbox for balancing innovation and consumer protection; to create an Innovation Hub for supporting the development of a digital finance industry ecosystem (Industri Keuangan Digital, IKD); and to develop a FinTech Education hub for academics, business players, government, and consumers (OJK, 2021a). As of August 2021, more than 80 FinTech companies have registered with OJK, with business models in more than 16 business activities, including e-KYC, lending, RegTech, and InsurTech (OJK, 2021d).

In 2019, celebrating OJK Infinity's first anniversary, OJK launched an e-portal for the digital finance industry called Gerbang Elektronik Sistem Informasi Keuangan Digital (GESIT). GESIT is the main communication portal between OJK and FinTech firms. Through GESIT, FinTech firms can register their entities with OJK. Some sectors covered in GESIT include e-KYC, lending, InsurTech, and RegTech-PEP (OJK, 2021b).[17]

17 Other sectors include: Blockchain-based Platform, Credit Scoring, Funding Agent, Insurance Broker Marketplace, Online Distress Solution, Property Investment Management, Tax & Accounting, Transaction Authentication, and Wealth Tech

As a consequence of economic growth and increased regulatory activity across APAC, regulatory compliance costs for financial services activities also continue to increase in Indonesia. For example, AML compliance costs across Singapore, the Philippines, Malaysia, and Indonesia combined totals approximately $6.09 billion each year (FinTech Global, 2021). There is great regulatory interest in initiatives that may help to reduce these costs in the long run such as leveraging RegTech to improve and facilitate regulatory compliance and supervisory oversight. RegTech can mitigate data breaches and cybersecurity risks and reduce the number of compliance-related reports to regulators (OJK, 2020a). In its action plan for 2020-2024, OJK states it will implement regulation and develop infrastructure for RegTech and SupTech in 2022 (OJK, 2020b). In 2023, OJK plans to start initial RegTech and SupTech implementation for market-conduct supervision and feedback (OJK, 2020a).

P2P lending / Equity crowdfunding regulation

P2P lending is regulated by OJK since the introduction in 2016 of Regulation No. 77 /POJK.01/2016, regarding Information Technology Based Money Lending Services (P2P Lending Regulation) (OJK, 2016). The regulation includes modest minimum capital requirements, a prohibition against directly providing or receiving loans, and a mandatory 'sandbox' period for new entrants (FitchRating, 2021). A new OJK rule draft to take over the current law was published in November 2020, tightening regulations limiting the maximum loan granted by a lender to 25% of the total annual outstanding loan (OJK, 2021c; Vantage Asia, 2021).

ECF was not, however, within the scope of the regulations, since no ECF businesses were operating in Indonesia at the time the regulation was implemented. This had the effect of preventing growth in the ECF market temporarily (Chang, 2018). Responding to the problem, OJK published OJK Regulation No. 37/ POJK.04/2018 in December 2018, allowing ECF businesses to operate in Indonesia (OJK, 2018b). Although OJK expects the market is to increase, capital raising through equity crowdfunding is only available to companies whose assets (excluding land and property value) do not exceed IDR 10 billion ($0.7 million) (OJK, 2018b). OJK Regulation No. 57/2020 on securities crowdfunding widened the scope of 'crowdfunding' to include equity securities in shares, debt securities and sukuk, or other convertible securities. It also widened the scope of issuers and allowed non-legal entities to be issuers, enabling micro-, small- and medium-sized enterprises (MSMEs) to easily access funds (Vantage Asia, 2021; OJK, 2020c).

Key challenges for the Indonesian regulators

Indonesian regulators face three key regulatory challenges, which are summarised in **Table 10.1**

Table 10.1: Summary of challenges, Indonesia

AREA	SUMMARY OF CHALLENGE
Data protection	• Until recently, Indonesia lacked consolidated data protection regulations – this had prevented development in the FinTech sector (Akhlas, 2020). • In 2020, the Indonesian House of Representatives deliberated a a Personal Data Protection Bill which is an overarching data protection regulation initiated by the Ministry of Communication and Informatics (MOCI) (SETNEG, 2019).
e-KYC	• Indonesia currently lacks standardised KYC infrastructure and has just one source of identification which creates major challenges for FinTech firms, increasing the operational cost and lengthening the onboarding and verification process (MSC and SNKI, 2020). • Infrastructure (including regulation) to set a reliable single source of information is needed (MSC and SNKI, 2020).
Digital capabilities and skills	• As stated in OJK's Financial Sector Master Plan 2021-2025 (MPSJKI, Master Plan Sektor Jasa Keuangan 2021–2025), Indonesia is experiencing a shortage of talent that is needed to accelerate the digital economy, which includes digital professionals, digital facilitators, and digital savvy leaders (OJK, 2020b). • Four positions with the highest talent shortage to support digital transformation in the financial sector (including FinTech) are tech and software, product management, design, and marketing.

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