

DISCUSSION PAPER SERIES NO. 2021-29

# Analysis of the FinTech Landscape in the Philippines

*Francis Mark A. Quimba, Mark Anthony A. Barral,  
and Jean Clarisse T. Carlos*



The PIDS Discussion Paper Series constitutes studies that are preliminary and subject to further revisions. They are being circulated in a limited number of copies only for purposes of soliciting comments and suggestions for further refinements. The studies under the Series are unedited and unreviewed. The views and opinions expressed are those of the author(s) and do not necessarily reflect those of the Institute. Not for quotation without permission from the author(s) and the Institute.

---

## CONTACT US:

**RESEARCH INFORMATION DEPARTMENT**  
Philippine Institute for Development Studies

18th Floor, Three Cyberpod Centris - North Tower  
EDSA corner Quezon Avenue, Quezon City, Philippines

publications@pids.gov.ph  
(+632) 8877-4000

<https://www.pids.gov.ph>

# Analysis of the FinTech Landscape in the Philippines

Francis Mark A. Quimba  
Mark Anthony A. Barral  
Jean Clarisse T. Carlos

PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

December 2021

## **Abstract**

FinTech in the Philippines has been gaining more attention in the recent years, especially during the onset of COVID-19 pandemic when lockdowns are prevalent and cashless payment methods are encouraged to limit exposure to health risks from face-to-face and cash-based transactions. Digital payments and digital engagements of both men and women have increased, and more and more banks and non-banks financial service providers have entered the digital space, providing more diversified financial products and services through various platforms. Despite these developments, however, the industry financial inclusion in the Philippines remains lagging behind compared to ASEAN neighbors. In addition, FinTech has faced concerns pertaining to the reliability and consistency not only of the systems but also of the regulations. With the financial sector being heavily disrupted by digitalization, there is more to look into than defining FinTech elements and considering it as just another service innovation. Defining the interplay across the stages of FinTech transformation does not seem to be well explored in the Philippines. This paper explores the state of the industry and investigates how to support the development of the ecosystem to ensure that FinTech helps in the achievement of the country's development goals. This paper finds that the Philippines has a strong FinTech industry as indicated by an increasing number of FinTechs (particularly in payments, lending and Banking technology verticals) and increasing capitalization. The FinTech industry can support the country's goals of financial inclusion but there needs to be an improvement in areas of availability of talent and credit for the sector.

**Keywords:** Business models, FinTech, FinTech ecosystem, e-money, lending, financial inclusion, financial literacy

## Table of Contents

<b>1. Introduction .....</b>	<b>1</b>
<b>2. Defining FinTech .....</b>	<b>2</b>
2.1. FinTech Taxonomy .....	3
2.2. FinTech in Other Economies .....	9
<b>3. Methodology .....</b>	<b>12</b>
3.1. Review of Conceptual Frameworks .....	12
3.2. Methodology and Data .....	14
<b>4. Philippine FinTech Ecosystem .....</b>	<b>15</b>
4.1. Who are the FinTech players? .....	20
4.2. Demand for FinTech .....	24
4.3. Availability of capital .....	28
4.4. Talent Formation and the Role of the Academe .....	31
4.5. The Role of the Government .....	35
<b>5. SWOT Analysis .....</b>	<b>37</b>
5.1. Strengths .....	37
5.2. Weaknesses .....	41
5.3. Opportunities .....	43
5.4. Threats .....	44
<b>6. Conclusions and Recommendations .....</b>	<b>44</b>
<b>Bibliography .....</b>	<b>47</b>
<b>Annexes</b>	
Annex 1: Laws regulating and supporting the operations of FinTech .....	54

### List of Boxes

Box 1. The Global FinTech Index .....	19
Box 2. National Retail Payment System .....	36

### List of Figures

Figure 1. The Digital Lending business process .....	5
Figure 2. P2P lending business model canvas .....	6
Figure 3. EPP business model canvas (a B2B model) .....	8
Figure 4. Attributes of the FinTech ecosystem .....	12
Figure 5. Framework for a well-functioning ecosystem .....	13
Figure 6. Framework for a well-functioning ecosystem .....	15
Figure 7. Number of FinTechs in ASEAN, 2017 .....	17
Figure 8. Value of FinTech investments in ASEAN, 2017 (in \$MN) .....	17
Figure 9. Investment and new FinTech companies created in the Philippines .....	18
Figure 10. Employment in related industries, 2014-2017 .....	18
Figure 11. Findexable score of ASEAN cities, 2021 .....	19
Figure 12. Distribution of Philippine FinTechs in 2017 .....	20
Figure 13. Distribution of FinTech companies in 2018 .....	21
Figure 14. Fintechs in the Philippines, 2020 .....	22
Figure 15. Digital transformation of companies in ASEAN, 2017-2021 .....	26
Figure 16. Use of big data and analytics of companies in ASEAN, 2017-2021 .....	26
Figure 17. PESONet Volume and Value, 2017-2021 .....	27
Figure 18. Instapay Volume and Value, 2017-2021 .....	27

Figure 19. Need for more Venture Capital investors in Fintech, 2018 .....	30
Figure 20. Ease for entrepreneurs with innovative but risky projects to find venture capital (1-7 [best]), 2010-2019 .....	30
Figure 21. Deals in digital sector in the Philippines .....	31
Figure 22. Higher education enrollment by discipline group, AY 2010-11 to 2019-2020 .....	32
Figure 23. Foreign highly-skilled personnel (digital) are attracted to your country's business environment (based on an index 0-10 [best]), 2016-2020 .....	33
Figure 24. Digital and technological skills are readily available (based on an index 0-10 [best]), 2016-2020 .....	34
Figure 25. Skilled labor are readily available (based on an index 0-10 [best]), 2016-2020 ..	34
Figure 26. Extent of employee digital training by corporates, 2019 .....	35
Figure 27. Mobile phone and internet usage for financial transactions, 2019.....	39

## List of Tables

Table 1. Summary of FinTech taxonomy and classification.....	4
Table 2. SEC-registered FinTech related companies, 2020-2021 .....	23
Table 3. Philippine FinTech Companies listed in Global Fintech Index .....	23
Table 4. Usage, accessibility, and awareness of access points, 2019 .....	24
Table 5. E-Money Transactions .....	25
Table 6. Customers of FinTechs in Indonesia and Philippines, share by sector, 2019 .....	25
Table 7. Instapay participants as of October 2021 .....	28
Table 8. Number of Fintech fundraising deals in selected ASEAN countries, 2010-2020 ....	29
Table 9. Value of Fintech Fundraising deals in selected ASEAN countries, 2010-2020, MN USD .....	29
Table 10. Higher Education Graduates by Discipline Group: AY 2010-11 vs 2018-2019.....	32
Table 11. FinTech regulators and their functions.....	35
Table 12. E-Money Transactions .....	37
Table 13. Composition of financial needs and sources of spending, 2017-2019.....	38
Table 14. Profile of mobile phone owners and internet users, 2019 .....	40
Table 15. Profile of mobile subscriptions and internet usage, 2018-2021 .....	40
Table 16. Reasons for not using mobile phones and internet for financial transactions .....	42
Table 17. Speed and cost of internet as of October 2021 .....	42

## **List of Abbreviations**

AI	Artificial Intelligence
API	Application Programming Interface
ASEAN	Association of Southeast Asian Nations
BSP	Bangko Sentral ng Pilipinas
B2B	Business-to-Business
B2C	Business-to-Consumers
COVID-19	Coronavirus disease 2019
DFS	Digital Financing Services
e	Electronic (e.g. e-wallet, e-commerce, e-banking etc.)
FinTech	Financial Technology
FIRe	Fourth Industrial Revolution
ICT	Information and Communications Technology
IT	Information Technology
MNO	Mobile Network Operations
MSME	Micro-, Small, Medium Enterprises
NRPS	National Retail Payment System
P2M	Person-to-Merchant
P2P	Person-to-Person or Peer-to-Peer
QR	Quick Response
SEC	Securities and Exchange Commission
SME	Small and Medium Enterprises

# **Analysis of the FinTech Landscape in the Philippines**

***Francis Mark A. Quimba<sup>\*1</sup>, Mark Anthony A. Barral<sup>\*\*</sup>,  
and Jean Clarisse T. Carlos<sup>\*\*\*</sup>***

## **1. Introduction**

Financial Technologies (FinTechs) continue to grow globally despite the COVID-19 pandemic. According to a market rapid assessment in 2020, FinTech firms reported year-on-year average increase of 13 percent increase in the number of transaction and 11 percent in transaction volumes in Q1-Q2 (interchangeably H1), which are consistent with other indicators, including new customer acquisition and customer retention (CCAF et.al. 2020).

Using the Oxford COVID-19 Government Response Tracker (OxCGRT) dataset, it was found that FinTech markets in economies with more stringent COVID-19 measures reported higher growth in transaction volume. The dataset classified countries based on their government's responses' level of stringency (low, medium, and high). On average, FinTech transaction volume in high stringency markets grew by 50 percent higher than countries with less stringent COVID-19 response. This trend is most evident for Digital Payments that grew by 29 percent in high stringency jurisdictions, which is twice the growth in Digital Payments in low stringency jurisdictions during the same period. Following this trend is the demand for the Market Provisioning FinTechs, which grew 20 percent in high stringency jurisdictions, while only 2 percent in low stringency jurisdictions. Market Provisioning FinTechs enable or support infrastructure or key FinTech and/or Digital Financial Services markets functionalities, and include Enterprise Technology Provisioning, Digital Identity, Alternative Data and Credit Analytics, and Regulation Technology (RegTech), which account for 21 percent of the survey responses (CCAF 2020).

Comparing the trends between FinTechs in emerging markets and developing economies (EMDEs) and in advanced economies (AEs), the average growth rates of transaction volume and numbers in EMDEs are 12 and 15 percent, respectively, while only 10 and 11 percent in AEs. EMDEs, however, also reported significant increases in operational challenges, costs, and risks, larger than those in AEs retention (CCAF et.al. 2020).

FinTech may help improve the efficiency of financial services and address economic and social issues. However, concerns on the use of cryptocurrency and initial currency offerings (ICOs) are recently surfacing, as these products can potentially make laws and regulations ineffective, particularly against illegal activities and cross-border capital flows, such as money laundering (Hua and Huang 2020). This posts some regulatory challenges but also gives more weight to the importance of accurate and timely policies. Regulatory frameworks, however, need to be crafted carefully as it may not only inspire innovation and improvement, but can also potentially dissuade and result in instability, instead.

---

<sup>\*</sup> Senior Research Fellow at Philippine Institute for Development Studies (PIDS) and Director of Philippine APEC Study Center Network (PASCN). Email: [FQuimba@mail.pids.gov.ph](mailto:FQuimba@mail.pids.gov.ph).

<sup>\*\*</sup> Supervising Research Specialist at PIDS. Email: [MBarral@mail.pids.gov.ph](mailto:MBarral@mail.pids.gov.ph)

<sup>\*\*\*</sup> Project Evaluation Officer III at PASCN-PIDS. Email: [JCarlos@mail.pids.gov.ph](mailto:JCarlos@mail.pids.gov.ph)

The use of digital payment platforms in Asia have skyrocketed during the pandemic. In the Philippines, the leading mobile wallet, GCash, reported a 700 percent year-on-year increase in transaction volume in June 2020 alone, with registered users doubling in the first half of the year (Susantono 2021). This trend has implications on the role of FinTech in achieving the country's development goals, which is enshrined in the Philippine Development Plan 2016-2022 strategy of *"Strengthening the effectiveness of financial inclusion initiatives by focusing on the efficient delivery of microfinance and micro-insurance products for Filipinos including those living abroad"* (p.239).

To better understand the role, trends, benefits, and risks brought by FinTech, and the needs of the industry to ensure that it produces the intended benefits in line with the country's development agenda, this study aims to answer the following questions:

1. What is the state of the FinTech industry in the Philippines?
2. How can the FinTech industry support the achievement of the Philippine development goals?
3. How can the Philippines support the development of the FinTech ecosystem?

In order to address these questions, this study aims to bring to light the development and issues involving the FinTech industry given the various factors accelerating its adoption. Specifically, this study aims (1) to identify the players and stakeholders in the FinTech landscape of the country, and (2) to assess the environment by identifying the strengths, weaknesses, opportunities, and risks faced by the sector.

The rest of this paper is organized as follows. Part 2 presents a definition of Fintech and the experiences of other countries in developing their fintech industry. Part 3 presents the conceptual framework that would be used for this study while Part 4 describes the Philippines' ecosystem. Part 5 concludes by identifying the strengths, weaknesses, opportunities and threats to the current ecosystem. Based on this, Part 6 provides some general recommendations.

## **2. Defining FinTech**

FinTechs encompass *"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"* (CCAF et.al. 2020, p.6). FinTechs are seen to transform the financial industry by reducing the costs in providing services, improving the quality and variety of financial services/products and establishing a more stable financial sector. The rise of the fourth industrial revolution (FIR) technologies such as big data, data analytics, Artificial Intelligence (AI) and others have also brought about startups that are disrupting the traditional financial sector. Highlighting the importance of technology to FinTechs, Findexable (2019) defined FinTechs as any enterprise that applies a technology-enabled innovation in order to provide financial services.

For the Philippines, however, there is no official definition of FinTechs (Fintech Alliance Philippines 2019; Javier 2019). Because of this lack of a definition provided by law or policy, there is also difficulty in obtaining official indicators on the performance of the sector. However, there are still several documents assessing the Fintech sector which can be the foundation for a definition for the country. The Fintech Association of the Philippines considers FinTechs as *"financial services that are deployed through the Internet and/or mobile applications. These are usually characterized by more user-friendly interfaces, greater*



*efficiency, transparency, and higher levels of automation than those offered by more traditional institutions” (Fintech Alliance 2019, p.46).*

In a presentation delivered in 2019, Javier (2019) used the definition by FSB (2017, p.7) that defined FinTech as *“technology-enabled innovation in financial services that could result in new business models, applications, processes or products with associated material effects on the provision of financial services”*. For these financial services, the adoption of technological innovations brings about improvements in operational efficiency, enhanced customer experiences and more decisive competitive advantage.

One of the most recent definitions of FinTech is given by the Financial Sector Forum<sup>2</sup> which defined Fintech as any *“software, a service, or a business that provides technologically advanced ways to make financial processes and transactions more efficient compared to traditional methods”*. The definition includes specific descriptions of activities that would be covered by Fintechs. These would include financial operations using digital technology or being delivered through digital means, including electronic money, mobile financial services, and online financial services; monetary transactions such as depositing, withdrawing, sending and receiving money, as well as other financial products and services including payment, credit, savings, pensions and insurance; and also include non-transactional services which are incidental to the financial transaction, such as viewing personal financial information through digital devices. This definition is the closest the country has to a policy that specifically defines Fintechs.

## **2.1. FinTech Taxonomy**

Considering the diversity of FinTech institutions, products and services, and recognizing the need for a coherent understanding of the nature of FinTech activities, the Cambridge Centre for Alternative Finance (CCAF), World Bank (WB), and World Economic Forum (WEF) in 2020 developed a working taxonomy<sup>3</sup> for FinTech and categorized FinTech verticals into two major groups - (1) retail facing, which provide financial products and services to general consumers, households and micro, small and medium enterprises (MSMEs), in business to consumer (B2C) schemes; and (2) market provisioning, which target infrastructure and functionalities support of FinTech and/or digital financing services (DFS) markets, as summarized in **Table 1**.

---

<sup>2</sup> Created in 2014, the Financial Sector Forum is a voluntary interagency committee, composed of the Bangko Sentral ng Pilipinas (BSP), Securities and Exchange Commission (SEC), Insurance Commission (IC), and Philippine Deposit Insurance Corporation (PDIC). It aims to provide an institutionalized regulatory framework for coordinating the supervision and regulation of the financial system, facilitate consultation and the exchange of information and ideas among regulators and provide a platform to harmonize the regulation of financial products offered by the various types of financial institutions.

<sup>3</sup> In 2019, The Fintech Alliance.Ph has come up with a taxonomy of Fintech in the Philippines. The definitions in that taxonomy have been incorporated in this study.

**Table 1. Summary of FinTech taxonomy and classification**

Category	FinTech Vertical/Business Model
Retail Facing (Consumers, Households & MSMEs)	Digital Lending
	Digital Capital Raising
	Digital Banking
	Digital Savings
	Digital Payments
	Digital Asset Exchange
	Digital Custody
	InsurTech
	WealthTech
Market Provisioning	RegTech
	Alternative Credit & Data Analytics
	Digital Identity
	Enterprise Technology Provisioning

Source: CCAF, World Bank and World Economic Forum (2020)

Digital lending is the process of providing loans in which application, disbursement, and management are mainly conducted through digital channels such as utilization of digitized data or using cashless channels (Beatrice 2020). Digital innovations can be used throughout the lending process (**Figure 1**). Through the use of digitized data, digital lenders are able to formulate better decisions on credit applications and enhance customer engagement. It improves efficiency by shortening decisions on loans without sacrificing security. Disbursement and collection can also be done remotely through digital wallets. Customer data and automation can also be incorporated in the digital lending process.

**Figure 1. The Digital Lending business process**

Customer acquisition	Approval Analytics	Disbursement and Repayment	Collection	Customer engagement
<p>Customers are acquired by using a mix of digital marketing tools and digital on boarding channels.</p> <p>Digital lenders make use of innovations in technology to access government and private sector verified records before lending.</p>	<p>The background of the applicants for a loan are analyzed using digital technology. Using digital data and process automation, quicker, automated and more accurate underwriting decisions are reached.</p> <p>Digital lenders use various data sources, advanced algorithms and data analytics to quickly and remotely make secure decisions.</p>	<p>Disbursement of loans and collection of repayments are done remotely through digital channels.</p> <p>These cashless channels improve operations and reduce security risks by providing lenders, provides customers access to their funds instantly.</p>	<p>Digital lenders leverage data and algorithms to support their collection process.</p> <p>To motivate repayment, digital lenders can blacklist identified delinquent customers. This blocks their access to future funds.</p>	<p>Digital lending does not end with disbursement and collection.</p> <p>Digital channels and customer data analysis can be used to customize services and improve customer experience throughout the lending process.</p>

Source: Beatty (2020); Beatrice (2021)

Another FinTech Lending sub-vertical is the peer-to-peer or people-to-people lending (P2P), which offers individuals and businesses an opportunity to connect with each other (**Figure 2**). FinTechs involved in lending do not engage in the lending themselves but have an agreement with financial institutions operating the lending. FinTechs match lenders and borrowers and facilitate the collection of payments. In other words, P2P lending consolidates debt and credit card refinancing, among others.

For P2P lending, the value proposition is to provide profitable investments for lenders and easier access to credit for individuals wanting to borrow. The key partners for this type include credit scoring companies, who provide an assessment of the creditworthiness of potential borrowers and match them with appropriate lenders whose specified criteria they meet, and the loan processing banks (Lüftenegger et al. 2010).

**Figure 2. P2P lending business model canvas**

<i>Key Partner</i>	<i>Key Activities</i>	<i>Value Proposition</i>	<i>Consumer Relationships</i>	<i>Customer Segments</i>
Credit scoring Companies  Loan processing banks	Platform maintenance and development  <i>Key Resources</i>  P2P lending platform	Profitable investment opportunities  Easier access to credit	Community  <i>Channels</i>  P2P website	Wealthy investors  Borrowers without traditional access to credit
<i>Cost Structure</i>		<i>Revenue Streams</i>		
IT infrastructure, Software developments, Partner fees		Percentage of fixed fess for loans, Percentage fees for perceived payments		

Source: Modified from Lüftenegger et al. (2010)

Similar to P2P lending where funding is coming from different people, Crowdfunding FinTechs, which include rewards-based, donation-based, and equity-based crowdfunding, are digitally enabled modes of raising capital from different people. It empowers the people (funders) to control the creation of new products and raising funds for them (World Bank 2017). Unlike other FinTechs that usually only involve the institutions providing the products and services and the consumers, crowdfunding involves the entrepreneur who needs the funding, the contributors (or funders) who have interests in supporting the project, and a third party who supervises the engagement between the entrepreneur and contributor. Crowdfunding schemes typically differ based on the benefits received by the funder. In a rewards-based crowdfunding, the funder receives some interests set by the borrower who also provides a guarantee of the refund at a certain time. In equity-based crowdfunding, the entrepreneur provides a portion of the business to the funder in return for the funds, while in donation-based crowdfunding, the funder or the donor does not expect to receive any monetary compensation in return for the funds. Donor-based crowdfunding is typical to projects aimed for charitable purposes, while the rest are more focused on entrepreneurial and income-generating projects (CCAF et al. 2020).

Banks can also create a digital arm or a digital subsidiary for them to be able to offer digital services, while without altering their existing operations and services. A more revolutionary step, however, is to engage in an open banking infrastructure and transform into a digital bank, migrating the entire operation into a digital ecosystem. In digital banks and digital subsidiaries, banks partner with third party providers to leverage on FinTech innovations that can help reach more customers, better manage information, and offer more services (Denyes 2019).

In a bank-based model, the registered or licensed bank-led or non-bank-led financial institution may outsource or delegate some of the activities to a service provider, such as a mobile network operator (MNO), for the transmission of the transaction details and for the maintenance of sub-accounts. Here, the customers have contractual relationships with the business, and the financial product/service may or may not be bank-based but the bank has the primary responsibility for product delivery, marketing, branding, and customer relations. In a non-bank-based model, the digital or mobile financial service may also be banked-led or non-banked-led, and the customers also have contractual relationship with a non-bank service provider that is licensed to provide the product/service that may also be bank-based or non-bank-based but non-bank provider can take the lead in marketing, branding, and delivery of products/services (Alliance for Financial Inclusion 2016).

These services can be viewed through the main streams of open banking schemes, the Banking-as-a-Service (BaaS) and Banking-as-a-Platform (BaaP). In the BaaS model, third parties are allowed to distribute financial products and services by integrating FinTech products into the regulated financial infrastructure, and allowing non-financial companies to embed the banking products and services into their own services. How this integration is operationalized depends on the path and roles banks and third-party providers agreed upon, either as a provider, aggregator, or as a distributor. In a traditional BaaS, banks build their own in-house systems and remain to be the main provider of products and services in their own distribution channels. Banks may also invest and acquire systems from the vendors, and customize or enhance these for their own usage (Deloitte Consulting LLP 2021). In a BaaS model, banks can tap third party non-bank institutions to deliver services by allowing them to access information through an API<sup>4</sup> enabled environment. The bank owns the infrastructure layer, where they manage databases, control the network, and secure information. This layer is connected to the third parties' owned platforms, which may or may not be integrated to the bank's infrastructure (Rajan 2017).

In a BaaS scheme incumbent banks integrate API-based platforms with their existing back-office ecosystem and provide non-banks the opportunity to launch various financial products. This API-based open-banking system provides a more efficient way to target more customers and offer more products and services, without entirely transforming into a digital bank. For the third-party non-bank institutions, this setup enables them to smoothly deploy financial products without dealing with banking regulations, while still focusing on their own main business operations, and even have their own customer base (Rajan 2017).

On the other hand, BaaP provides banks some flexibility in leveraging technology by not only tapping third party services but also redefining their business models, including opening their secured databases, products and services to external partners. Banks and non-traditional financial institutions are more integrated and can provide a more comprehensive set of products and services (Rajan 2017).

For non-traditional banks, leveraging technology is straightforward as they are not constrained with existing legacy systems and culture that incumbent banks have to endure changing when migrating to a digital ecosystem. FinTech startups, for example, can exploit the core advantages

---

<sup>4</sup> An application programming interface (API) enables the flow of data and information between an end-user and data provider by establishing an online connection between the two. For financial markets, APIs establish the connection between trading algorithms or models and broker's platform..

of blockchain to create value and offer diverse services without making too much bargaining (Welsch et al. 2020).

With digital banking comes digital savings, a type of savings where services are done entirely digital using the internet and a gadget (Serfiyani 2019), mostly targeting the younger generations who are more inclined to using the internet (Martin 2016 in Serfiyani 2019). Digital savings function the same way as conventional savings, only easier and faster to manage. In digital savings, traditional functions, such as using savings books, and summarizing other functions- ATM cards, internet banking tokens, mobile banking applications - into one account. Digital savings do not only pertain to incorporating technology to conventional savings nor replacing manual transactions and making it online but eliminating the need to rely too much on banks or financial consultants. In other words, digital savings allow customers to have more control of their deposits and monitor their transactions (Serfiyani 2019). Digital savings are also integrated with micro-credit services (Donner 2017).

Digital Payment Systems are one of the fastest growing FinTechs as these are able to accumulate more consumers by offering easier payment mechanisms and at lower costs. It targets (1) consumer and retail payment and (2) wholesale and corporate payment (Lee and Shin 2017). Products and services under this type of FinTech solution are mobile wallets, P2P mobile payments, and digital currency solutions (BNY Mellon 2015, in Lee and Shin 2017). Institutions engage in this type of transactions leverage on payment technologies that can offer speed, convenience, and multi-channel accessibility (Lee and Shin 2017). Payments can be done through various approaches, including charging a phone bill, near field communication (NFC), barcode or Quick Response (QR) code, credit card on mobile websites, mobile phone card reader, and direct mobile payment (Li 2016, in Lee and Shin 2017).

As for the Electronic payment platform with a business-to-business (B2B) scheme, **Figure 3** shows that value is created by offering a flexible payment infrastructure that can be accessed by any developers or integrate into various platforms, such as websites or mobile applications, and allow the integration of various customer accounts or incorporate different payment schemes and channels. Customer segments for this type of FinTech product are e-commerce merchants and other developers providing other types of services (Lüftenegger et al. 2010).

**Figure 3. EPP business model canvas (a B2B model)**

<i>Key Partner</i>	<i>Key Activities</i>	<i>Value Proposition</i>	<i>Consumer Relationships</i>	<i>Customer Segments</i>
E-commerce partners	Platform maintenance, development and documentation	Flexible payment infrastructure	Community	E-commerce websites
Developers	<i>Key Resources</i> Electronic payment platform	Access to any developer	<i>Channels</i> Payment provider website	Start-ups companies Developers
<i>Cost Structure</i>		<i>Revenue Streams</i>		
Platform maintenance, development and documentation, Transaction costs (credit cards, bank accounts)		Transaction fees		

Source: Modified from Lüftenegger et al. (2010, p. 30)

Digital asset is “generally referred to an asset issued or transferred using distributed-ledger technology, such as blockchain” (Center for Capital Markets 2021, p. 7). Digital assets are of different types and characteristics. Cryptography or blockchain-based assets are sometimes referred to as cryptocurrency. Others that also leverage on blockchain are virtual currency, digital currency, coin, and crypto assets (Center for Capital Markets 2021). The Strategic Hub for Innovation and Financial Technology of the US Securities and Exchange Commission refers to digital asset as “an asset issued and transferred using distributed ledger or blockchain technology, including, but not limited to, so-called ‘virtual currencies’, ‘coins’, and ‘tokens’” (US SEC 2019, p.12). These differences in terms create confusion and digital assets sometimes becomes an umbrella term, which some companies used to offer not only products and services related to investment and securities but also as a “means by which blockchain-based good or service is provided to an accessed by consumers” (Center for Capital Markets 2021, p. 8). In the Philippines, the Bangko Sentral ng Pilipinas (BSP) uses the term virtual asset to “refer to any type of digital unit that can be digitally traded, or transferred, and can be used for payment or investment purposes. It can be defined as ‘property’, ‘proceeds’, ‘funds’, ‘funds or other assets’, and other ‘corresponding value’” (BSP Circular No. 1108 Series of 2021, Section 1a). This definition also referred to virtual currencies as virtual assets (BSP 2021).

In relation to digital asset management and ownership, another emerging digital service is digital custody. Digital custody is defined as “having control of private keys on behalf of clients” and “custody ..., administration ..., and safeguarding ... of crypto assets or private cryptographic keys used to hold, store or transfer crypto-assets as service for others” (ALFI 2020, p. 8). It can also be defined as a service that “allows institutional and private players to access and operate on the crypto market and to safely keep and use their funds” (PWC 2021).

Wealth Technology (WealthTech) includes other wealth management sub-verticals such as Digital Wealth Management, Social Trading, Robo-Advisors, Robo Retirement/Pension Planning, Personal Financial Management/Planning, Financial Comparison Sites. WealthTech is a model for automated wealth advising or robo-advisers, which provide financial advice and an array of investment options at a much lower cost based on a customer’s investment preferences and attributes.

In terms of FinTechs that are concentrated on trading, currency exchange, market research and analysis, capital-market FinTechs provide a venue for investors to interact and share information regarding commodities and stocks. This is mostly operated by financial institutions to provide more accessible means of engaging in trade and exchange at a lower cost, more secure, and real time ecosystem.

Insurance services business model provides a room to directly connect potential customers and insurance institutions by matching them using certain algorithms that calculate risks, provide product options, and streamline healthcare billing processes (Lee and Shin 2017).

## 2.2. FinTech in Other Economies

Fintech is growing in other countries. In China, financial laws and policies were characterized as repressive, thus preventing financial institutions from functioning at full capacity. In addition, state-owned banks largely dominate the financial sector and have a biased preference for lending to state-owned enterprises (SOEs) and large private companies, leaving SMEs underserved. This prompted the growth and expansion of the P2P industry, which remained completely unregulated for quite some time (Chen, Kavuri, and Milne 2020). When

the regulatory framework was announced in 2016, it required P2Ps to function as information intermediaries only (Hua and Huang 2020), and required stricter guidelines and capital requirements, resulting in uncertainty and decline in the number of operating platforms (Chen, Kavuri, and Milne 2020). Due to economic and social unrest over the regulation, several changes and delays have taken place since then, which may indicate that the government favors retaining the P2P sector. A guideline was released in 2019, allowing P2P platforms to operate as micro-loan companies under certain conditions. Concerns, however, remain whether the sector will survive (Chen, Kavuri, and Milne 2020).

In Indonesia, the underdeveloped financial systems, coupled with a large rural population, hinders the achievement of financial inclusion, which leads to low productivity, poverty, and unemployment. Fintech and P2P lending, therefore, are promoted as keys in addressing financial inclusion and reducing income inequality, by reducing red tape to encourage investment and access to financial services (Anisa 2021).

Promoting financial inclusion is one reason why several countries in the Asia-Pacific region are looking at technology and developing mobile financial services. India, for instance, has introduced basic banking functions on basic handsets, removing the burden brought by complicated banking applications. Similarly, the State Bank of Vietnam developed a national strategy to enhance the legal framework to improve fintech, consumer protection, enhance financial literacy, and expand financial products and services to rural and agricultural communities (Jahan et al. 2019).

The development of FinTech, particularly through crowdfunding schemes, and the application of artificial intelligence and blockchain, also benefits the small and medium enterprises (SMEs). Banks and traditional financial service providers have been the primary source of financing for SMEs but access to credit has been hard for years. One considerable reason is insufficient, if not totally unavailable, source of information to assess credit worthiness of SMEs, which is understandably perceived to increase the risks for financial institutions. Blockchain technology, therefore, can be utilized to resolve this issue by advancing information management and creating digital footprint, reducing credit risks and increasing confidence in SMEs to access credit (Yesseleva-Plonka 2021). The use of AI makes credit scoring, fraud detection, and matching of borrowers and investors faster and more efficient. In Singapore, SMEs' access to credit improves with an increase of crowdfunding to SMEs by 300 percent, and a reduction in bank lending. It is also observed that debt repayment timelines have improved. Across the world, crowdfunding is strongly and positively associated with per capita GDP, while lower financial access negatively affects alternative finance. This demonstrates a need to put policies in place and promote new financial innovation and schemes (Tok and Chansriniyom 2021).

FinTech also provides two streams of support to MSMEs. In Indonesia, financial products and services help ease obtaining credit and in conducting business transactions. FinTech innovation provides security, more affordable, and faster transactions, benefiting both sellers and buyers (Lestari et al. 2020). FinTech and intellectual capital both significantly improve the performance of MSMEs (Hamida, Prihatni, and Ulupui 2020). Thus, FinTech companies not only improve the delivery of financial services through digital channels and platforms but also provide better business solutions.



The development of FinTech, however, does not automatically result in financial inclusion, as there are other factors to consider. Financial literacy, for instance, affects how fintech innovations are appreciated, and may therefore alter the intended benefits of innovation.

In Vietnam, financial literacy is positively associated with awareness of FinTech products, including digital borrowing and lending, digital payment, digital insurance, and awareness index. It does not, however, correlate to awareness of digital financial advisors. FinTech literacy is also observed to be positively correlated with the adoption of FinTech products, such as electronic (e)-banking and e-payment services, but not on e-transfer. Moreover, low financial literacy does not only associate with low level of FinTech products awareness and adoption, but also explains underdevelopment of information and communications technology (ICT) infrastructure, which puts forwards the need to develop ICT infrastructure, in addition to financial education, as a requirement for FinTech development (Morgan and Long 2020).

These observations are similar in Japan, where financial literacy is found to increase an individual's decision to engage in risky financial behavior and FinTech adoption. Financial literacy positively contributes to the use of e-money, mobile applications, and the use of at least one FinTech service, but has a negative effect on holding cryptocurrency, which indicates uncertainty over cryptocurrency's price volatility (Yoshino, Morgan and Long 2020).

It is certain that FinTech and FinTech providers and start-ups help improve the deepening of financial inclusion and can potentially alleviate poverty and resolve economic inequality. FinTech, however, is not a perfect game-changer as the same innovation possesses regulatory impacts on the stability of the financial sector and consumer protection, especially with the entry of nonfinancial corporations and fintech giants. Considering the magnitude, arising concerns on the impacts of FinTech companies and innovation on traditional banks exists, whether they are substitutes or complements (Beck 2020). Thus, the role of regulatory framework, which will guide how financial technology can be utilized better and safer, cannot be dismissed.

Singapore's FinTech and incumbent banks also complement, but the reasons for complementarity may differ. On the other hand, fintech start-ups do not seem to significantly affect incumbent financial sectors in Indonesia and Vietnam, while no effect is observed in Malaysia and Thailand (Low and Wong 2021).

On the role of FinTech in improving macroeconomic stability, preliminary evidence in China confirms a rapid convergence in fintech development between lagging and leading regions, between 2013 and 2018. Another piece of evidence suggests that data-based credit scoring models improve financial and macroeconomic stability by taking out the "financial accelerator" that creates a vicious cycle of asset prices, credit policy, and real economic activities, which may result in financial crises. Also, the role of fintech-supported economy and online shopping during the COVID-19 pandemic, indicates that fintech can help mitigate the impact of economic shocks. Another preliminary piece of evidence suggests that the expansion of e-commerce helps integrate regional markets, reducing price volatility. Between 2001 to 2019, a structural break was observed for the Consumer Price Index (CPI) but not for the Producer Price Index (PPI), following the FinTech boom in 2013 (Huang 2020). Additionally, the improvement of efficiency of financial services, which helps boost the productivity of SMEs, subsequently providing more entrepreneurship, jobs, and income to households, are also considered more valuable roles of FinTech in China. Firms with more access to credit are able

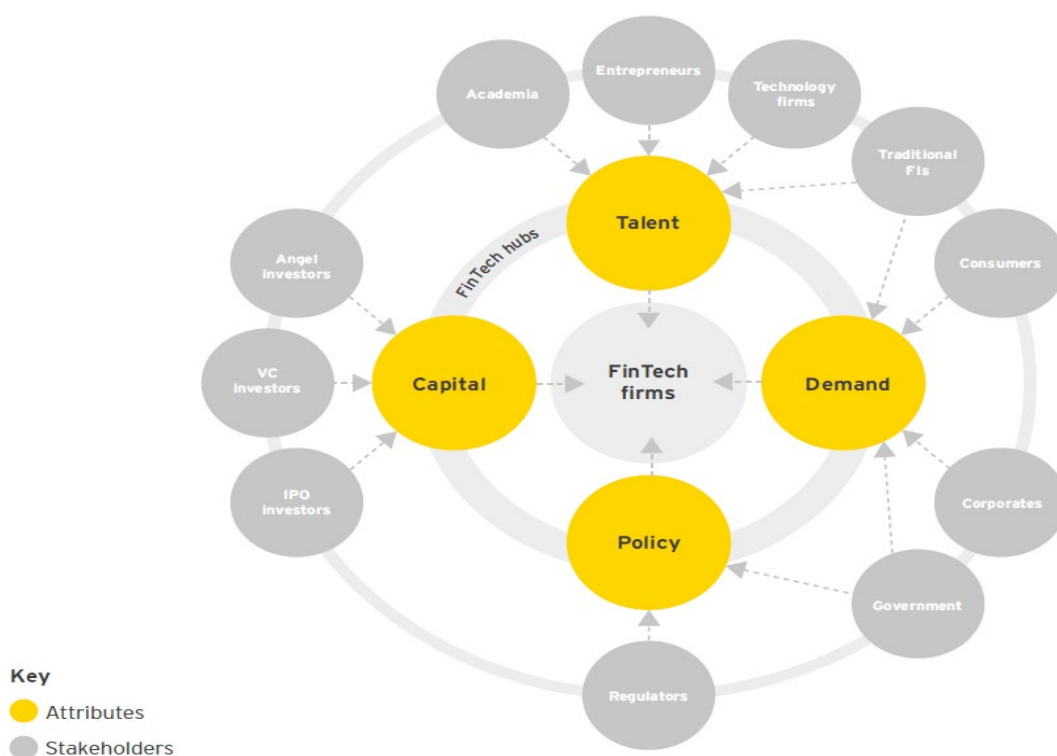
to expand their products, and farmers who adopt mobile payment are able to run informal businesses, increasing their income (Hua and Huang 2020).

### 3. Methodology

#### 3.1. Review of Conceptual Frameworks

A number of conceptual frameworks have been developed to describe the fintech ecosystem. One such framework (**Figure 4**) was used to describe the United Kingdom's FinTech ecosystem. The model identifies four attributes that support a well-functioning FinTech ecosystem, namely Talent pool (Talent), the availability of capital (Capital), the policy environment (Policy), and the demand for fintech services (Demand).

**Figure 4. Attributes of the FinTech ecosystem**



Source: Ernst & Young LLP (2016)

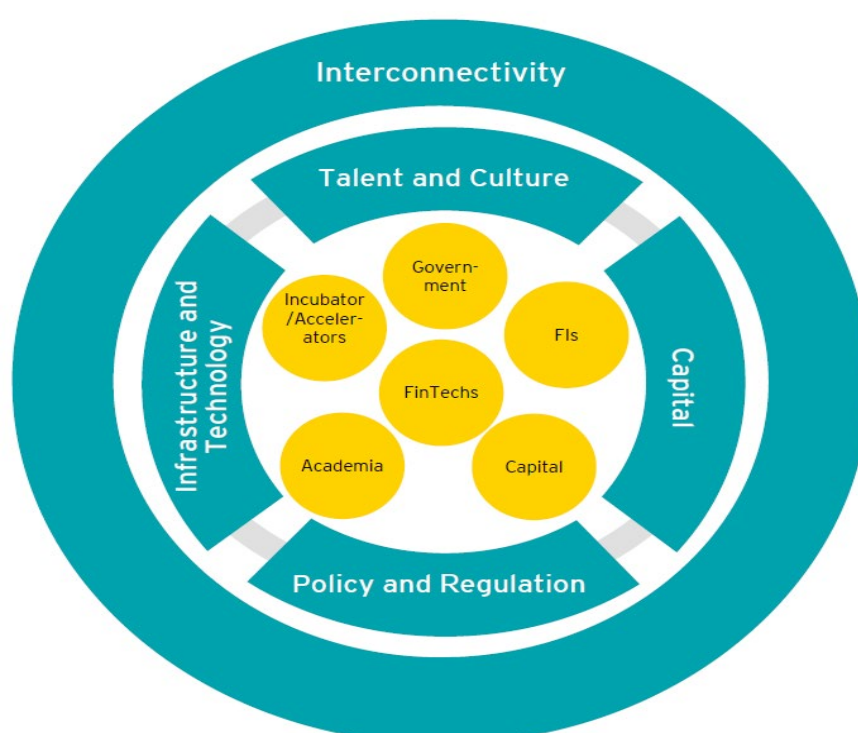
According to **Figure 4**, the 4 key attributes of the FinTech ecosystem affect the operations of FinTech firms. The availability of technical, financial services and entrepreneurial talent ensures that the FinTechs are able to hire employees who can support the company's operations. The availability of capital ensures that FinTechs which are often startups and scale-ups are able to fund the expansion of their operations. Government policy that would affect FinTechs would include regulations on entry and operations, tax and incentives regulations and other sector growth initiatives. Finally, Demand would include the demand of the consumers (end-users), corporates, government and even traditional financial institutions.

Stakeholders in the FinTech ecosystem participate through one or more of these attributes. For example, Government can participate in the fintech ecosystem as a user of fintech services (and thereby affecting demand) or it can affect policy. The private (business) sector (Technology firms, corporations, traditional financial institutions and Entrepreneurs) also participates in

various attributes of the fintech ecosystem. The entrepreneurs and technology firms provide talent that can be hired by the Fintech firms. The corporations demand fintech services. The traditional financial institutions provide both talent to FinTech firms and at the same time demand FinTech services.

A similar conceptual model for describing the FinTech ecosystem was developed by Ernst and Young (2020) in describing the Massachusetts FinTech Ecosystem (**Figure 5**). Similar to the previous framework, the ecosystem is composed of two parts: the stakeholders and the elements. The elements represent how the stakeholders contribute to the ecosystem. Each stakeholder may participate in one or more elements. There are five elements that serve as the pillars of a well-functioning FinTech ecosystem. These are Talent and Culture, Infrastructure and technology, Policy and Regulation and Capital.

**Figure 5. Framework for a well-functioning ecosystem**



Source: Ernst & Young LLP (2020)

On **Figure 5**, stakeholders represent the participants and contributors to the ecosystem. While these stakeholders may have different motivations, they are often independent and interconnected. There are 6 major categories of stakeholders in this model: Government, incubators/accelerators, Capital sources, Traditional Financial institutions and the FinTech institutions themselves.

FinTechs are at the core of the ecosystem. These would be businesses at various stages of operations (start-ups, scale-ups and mature companies). Capital providers would include Angels, venture capitalists, private equity, corporate venture capitalists. Government comprises regulatory bodies managing and governing the sector while academe includes all institutions engaged in education and research related to FinTech. Finally, incubators and accelerators include the collaborative programs, inclusive innovation labs and trade

associations, offering access to capital, mentorship and other legal and organizational support to early-stage companies.

While these models have already identified a detailed ecosystem, studies have shown that there are other elements that have not been incorporated. For instance, Lee and Shin (2017, p.3) have identified 5 elements of the fintech ecosystem. These are the following:

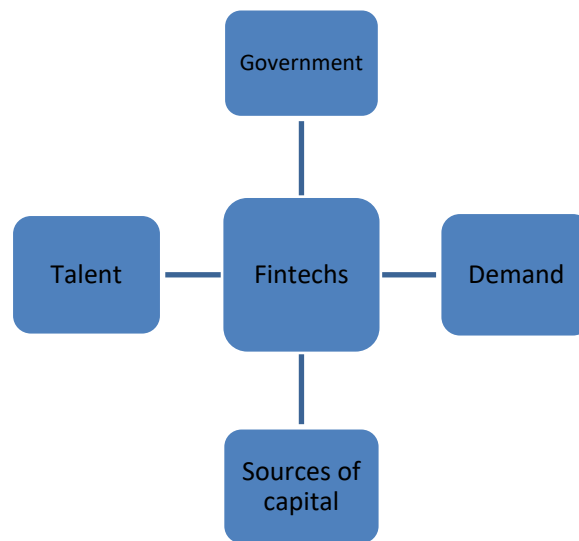
1. FinTech startups (e.g., payment, wealth management, lending, crowdfunding, capital market, and insurance fintech companies);
2. Technology developers (e.g., big data analytics, cloud computing, cryptocurrency, and social media developers);
3. Government (e.g., financial regulators and legislature);
4. Financial customers (e.g., individuals and organizations); and
5. Traditional financial institutions (e.g., traditional banks, insurance companies, stock brokerage firms, and venture capitalists).

Lee's model incorporates technology developers into the ecosystem which the previous models have not. Technology developers provide digital platforms for social media, big data analytics, cloud computing, artificial intelligence, smart phones, and mobile services. Technology developers create a favorable environment for fintech startups to launch innovative services rapidly. Big data analytics can be used to provide unique personalized services to customers and cloud computing may be used for cash-strapped FinTech startups to deploy web-based services at a fraction of the cost of in-house infrastructure development. Algorithmic trading strategies can be used as the basis for robo-advisor wealth management services at much lower fees than traditional wealth management services. Social media facilitates the growth of communities in the crowdfunding and P2P lending services. The ubiquity of mobile devices supplants the advantages of physical distribution. Mobile network operators are also providing low-cost infrastructure for FinTech companies' service development, such as mobile payment and mobile banking. In turn, the FinTech industry is generating revenue for these technology developers.

### **3.2. *Methodology and Data***

This study utilizes a combination of various FinTech models (Ernst and Young LLP 2016, 2020; Lee 2017) to describe the Philippine Fintech ecosystem. The following aspects of the ecosystem will be described in this study:

**Figure 6. Framework for a well-functioning ecosystem**



Source: Author's illustration

To describe the Philippine FinTech landscape, this study will present indicators of each aspect using secondary data. In particular, the following sources of data will be used by this study. For assessment of the FinTech companies operating in the Philippines This study will utilize 2 main databases. The first set of data contains a list of platforms from various sources, including FinTech Reports (2017, 2018, and 2020), and the Securities and Exchange Commission (SEC) for the registered institutions, where year of registration, services they provided, company, headquarters, description, among other information can be found. Other pieces of information are sourced from various sources on the internet. Indicators of talent and academe are from the Philippine Statistics Authority (PSA) and the IMD World Competitiveness, which identified the characteristics of the Filipino labor force. Demand for FinTech will be supplied by an analysis of the BSP's financial inclusion survey. The second set of data is the financial inclusion database of the BSP, which contains information on the demand for FinTech, and key statistics on the consumers and users of financial services.

To verify these findings, this study also collected primary data through key informant interviews (KIIs). These interviews will provide the researchers first-hand information on the experiences of FinTech companies in doing business in the Philippines and the experience of regulators in managing the growth of the sector.

#### **4. Philippine FinTech Ecosystem**

For the Philippines, FinTech is very promising as the country has been identified as one of the fast-growing FinTech destinations. According to Masally et al. (2019), FinTech and low-cost payment systems resulted in an increase in the number of adult Filipinos owning prepaid debit cards, from 12.7 million in 2013 to 21 million in 2018. FinTech companies and QR code-enabled payments resulted in an increase in the number of active mobile money accounts by 5 million.

The growth of digital payments in the Philippines is estimated to be 27 to 30 percent, compared to 25 percent in emerging Asian neighbors. In terms of women participation, the country does not only catch up on digitization but leads in the digital engagement of women, with 27 percent

of women transact digitally compared to only 23% for men. In 2019, faster growth in account ownership is observed among men (9%) compared to women (4%), but women remained to be more financially included (32.9%) than men (24.2%) (BSP 2019). Despite these developments, the Philippine's financial inclusion remains lagging behind at 34 percent compared to Association of Southeast Asian Nations (ASEAN) average of 74 percent in 2017 (Masally et al. 2019). However, it remains to evolve and grow.

During the COVID-19 pandemic, more banks have entered into the digital space, and delivered their services, either through their own in-house platforms or through partnership with FinTech service providers, which increased mobile banking and e-wallet services during the quarantine period, apparently easing the danger of face-to-face and over-the-counter transactions. The use of e-money was even supported in Congress by filing a number of bills promoting the use of e-money in all government transactions (Bunyi et al. 2021). The pandemic has indeed allowed the FinTech industry to prosper rapidly and forced banks to undergo digital transformation that usually takes several years under normal circumstances (Noble 2021).

But despite these, it still does not reflect the complete picture of the FinTech ecosystem in the country. In addition, the financial sector has already been disrupted with the digitalization of a number of financial products and services, with more may soon undergo the same transformation, there is more to look into than just consider FinTech as another service innovation.

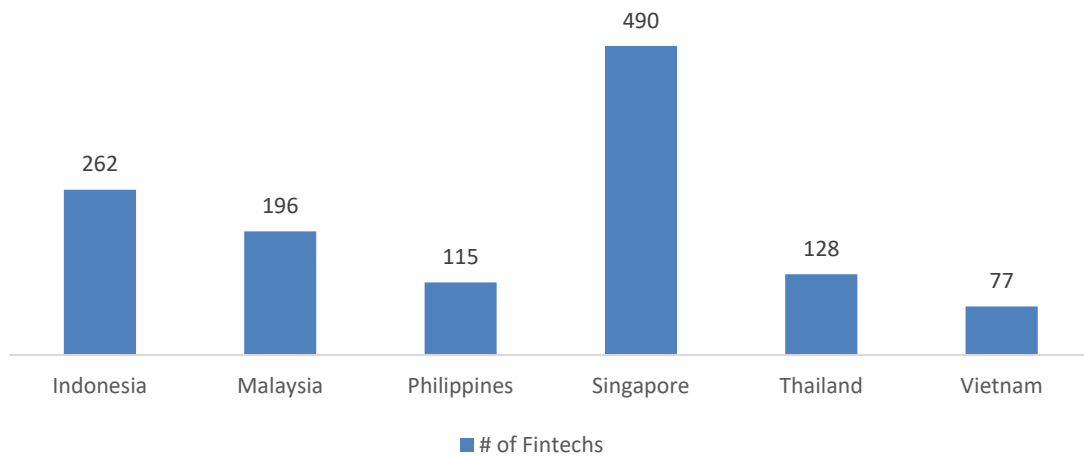
The FinTech elements may be easily defined but the interplay across at every stage of the transformation may seem not very well explored in Philippine context, considering the existing policy space governing it, or the lack of it. As FinTech continues to develop, there is always an anticipated emergence of new models and products that will continue to further disrupt the financial sector to varying degrees, which may pose certain risks that must be identified and mitigated ahead of time. Thus, the ecosystem of FinTech, which can be considered as a young and evolving industry in the country, should be comprehensively examined not only on the perspective of a generic linear approach but as a continuous non-linear process.

In 2017, there were 1,268 FinTechs in ASEAN. Singapore had the highest concentration, followed by Indonesia. The Philippines had only 115 (**Figure 7**). According to the latest report of BSP, however, the number of FinTechs in the country is already 212 as of December 2020, mostly involved in payments, lending, e-wallets, remittances, e-commerce, insurance investments, and even in regulatory technologies,<sup>5</sup> an increase of about 46 percent.

---

<sup>5</sup> Based on a KII conducted on October 29, 2021.

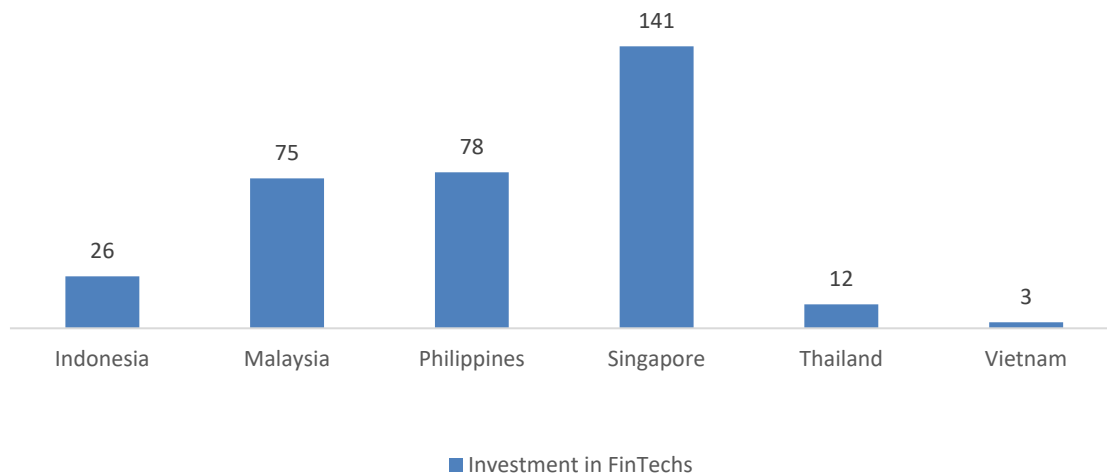
**Figure 7. Number of FinTechs in ASEAN, 2017**



Source: Author's illustration based on Tracxn in ASEAN FinTech Census 2018 Ernst & Young LLP (2018)

In terms of the value of investments in FinTech, Singapore also topped in 2017 with a total investment of 141 million USD, while the Philippines came in next with 78 million USD (**Figure 8**).

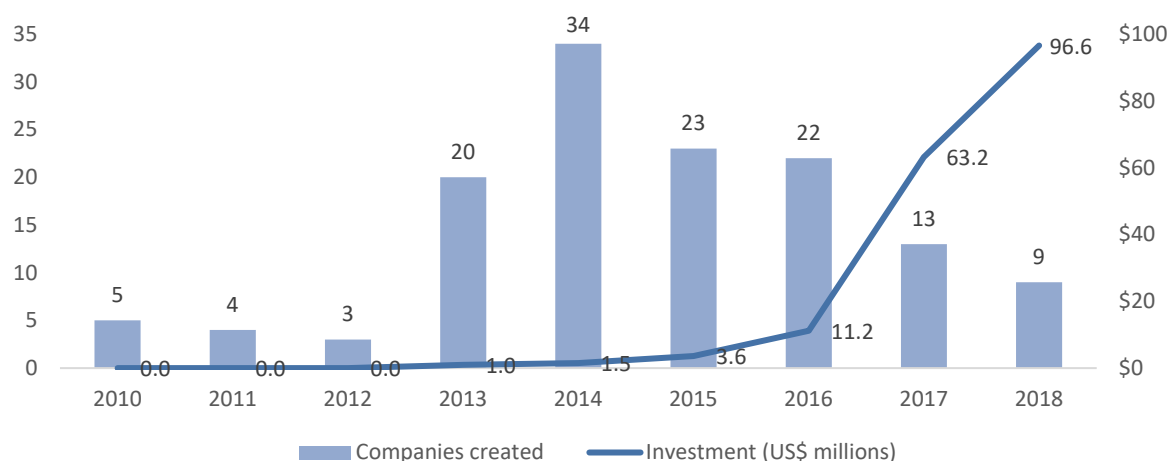
**Figure 8. Value of FinTech investments in ASEAN, 2017 (in \$MN)**



Source: Author's illustration based on Tracxn in ASEAN FinTech Census 2018 Ernst & Young LLP (2018)

In the Philippines, new FinTech companies were being created annually. From 2010-2018, 2014 was the year with most FinTech companies that were created with a total of 34 new FinTech companies. The number of companies created each year since then has dropped steadily with 2018 registering only 9 new FinTech companies. Investment, however, continued to increase exponentially from 2016 to 2018 at the rate of 762.5% (**Figure 9**).

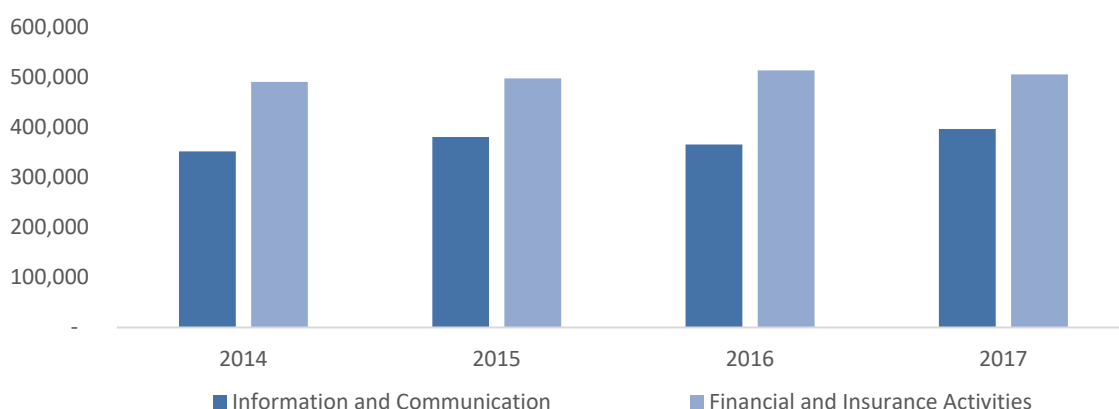
**Figure 9. Investment and new FinTech companies created in the Philippines**



Source: Adopted from Schellhase and Garcia (2019, p. 20)

The employment in these companies have not been reported but the employment in business and IT-related industries can be used as proxy measures of employment. Data from PSA seems to show that employment in these sectors have not changed significantly since 2014 (**Figure 10**).

**Figure 10. Employment in related industries, 2014-2017**



Source: Authors' construct based on PSA Labor Force Survey (various years)

According to the Global FinTech Index 2020 (see Box 1), the Philippines is among the list of countries to watch across the globe as it is one of the fastest growing FinTech destinations. This is because it has a much higher Fintech Index rankings than their Global Startup scores. Ranking the cities in ASEAN for 2021, the index found that Singapore leads the region with 226 FinTechs. Followed by Indonesia with 88 FinTechs. For the Philippines, The Global FinTech index found 183 FinTechs placing it third. Figure 11 presents the FinTech index scores of the other ASEAN countries in the Region. Based on the 2020 rankings, the Global FinTech Index report identified the Philippines and Vietnam as among the countries to watch out for because of the rapidly increasing Fintech scores. Findexable also found that the Philippines is excelling in the following FinTech categories: payments, enabling processes and technology, and banking and lending.



## Box 1. The Global FinTech Index

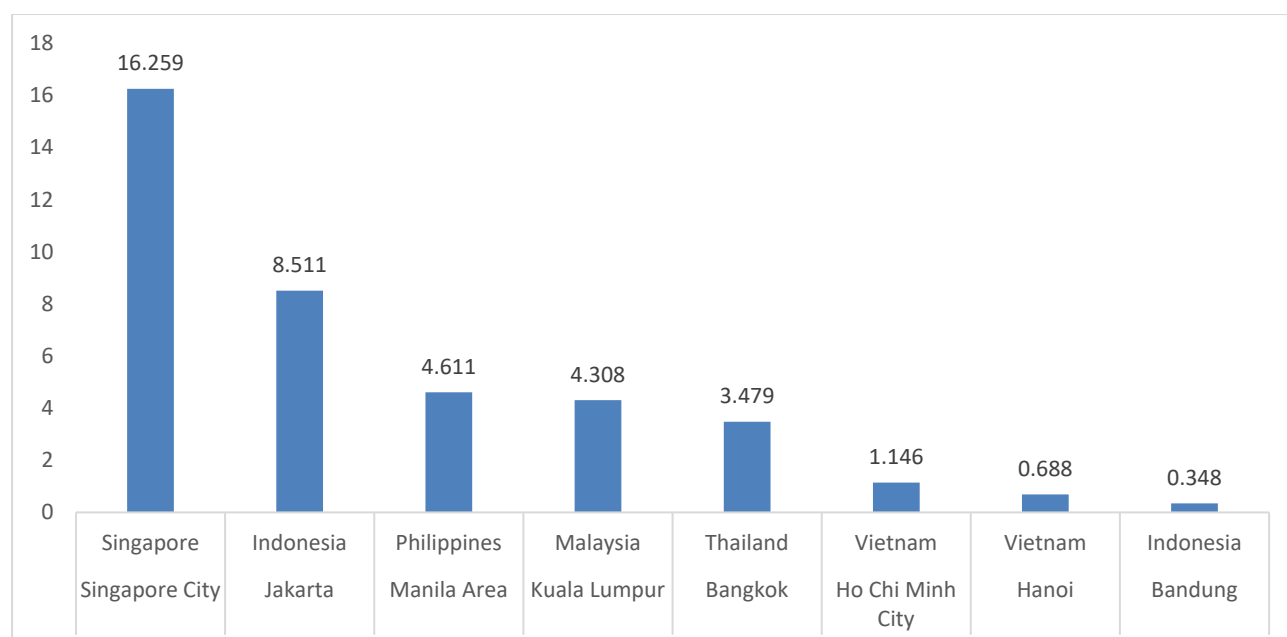
In 2019, Findexable released the first country and city rankings of FinTech ecosystems based on its Global FinTech index. The index is calculated by aggregating scores for each location based on the following:

- Quantity of privately owned Fintech companies. Starting from a universe of more than 11,000 individual fintechs, the index groups them by location. According to the report, locations with multiple hubs are clustered under a larger city.
- Quality of privately owned Fintech companies. The Global FinTech index considers the impact of a given company on the wider ecosystem factoring in data from SEMrush and Crunchbase on metrics including web presence, monthly visits, customer base, and valuation. The index also looks at the presence of major industry gatherings and 'gateway' fintech events and the population of the country to assess the scale of the ecosystem.
- Local business environment We use global measures such as the World Bank's Doing Business Report to gauge the ease and attractiveness of a specific location, based on levels of local 'red tape' and technology infrastructure. Ease of doing business metrics are only applied at the country level, meaning cities are judged on the merits of the ecosystems they have managed to build, rather than the economic environment the government has created.

The first report was released in 2020. It included 65 countries and 230 cities involving more than 7000 FinTechs. In 2021, the second FinTech report included more than 264 cities from 80 countries and more than 11000 FinTech companies.

Source: Findexable (2019)

**Figure 11. Findexable score of ASEAN cities, 2021**



Source: Findexable (2021)

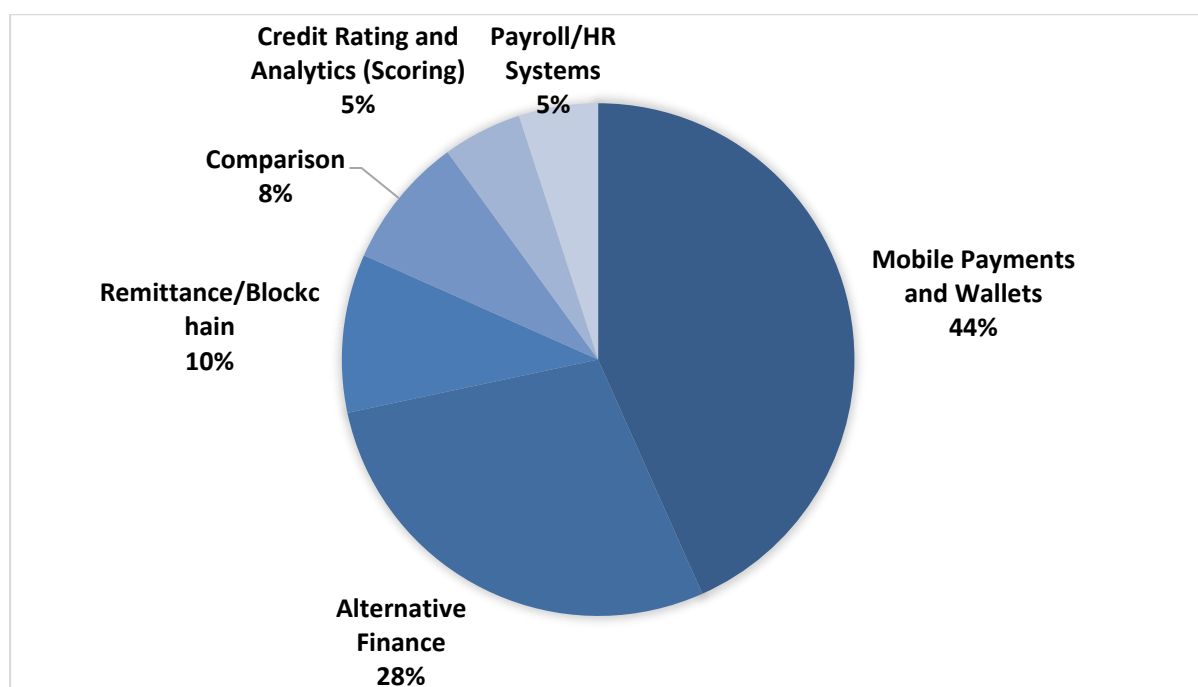
#### 4.1. Who are the FinTech players?

The Philippine FinTech Startup Report 2017, released in September 2017 by FinTech Singapore (Singapore FinTech Association), categorized 60 Philippine FinTech startups into 6 categories - payment, alternative finance, remittance, comparison portals, credit rating and analytics, and payroll/HR (Figure 12). Payment provides mobile commerce and payment services; including e-wallet/digital wallet providers. These FinTechs allow their clients to send, receive, and share money, which can be one via Short Message Service (SMS) web, mobile or application programming interface (API) integrations. Alternative Financing FinTechs includes providers of digital loans, microloans, online pawn shop, and other lending and credit related services; also include crowdfunding, and one-stop loan solutions that connect borrowers and lenders, and “shop now pay later” services. These two comprise the largest share of FinTechs in 2017. Remittance FinTechs facilitates international and domestic money transfers which also including bitcoin transfer or exchange. In 2017, this category of FinTechs comprise about 10 percent of the market. Comparison portals provide analytics comparing products and services suitable for the needs of consumers while Credit ratings and analytics provides solutions to assess the credit-worthiness of individuals, and analytics related to investment decisions, transactions, and investment flows.

Payroll/HR FinTechs are related to HR related solutions such as web and mobile application dashboards that consolidate bills payment, healthcare, and insurance, business tools; time and attendance, end-to-end payroll solutions, disbursements, and compliance; computation of taxes and savings

The following year, the 2018 Report identified a total of 126 startups categorized into mobile payments and wallets, remittance, credit scoring, comparison, and additional categories for investment and blockchain/cryptocurrency (Figure 12).

**Figure 12. Distribution of Philippine FinTechs in 2017**



Source: Philippine FinTech Startup Report, 2017

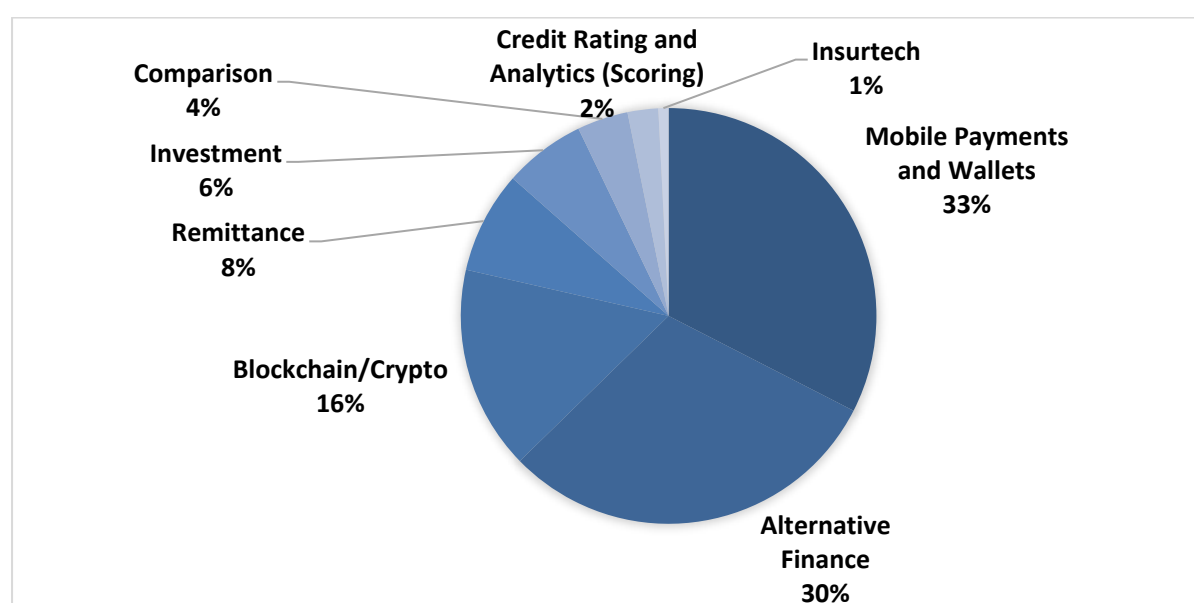
Blockchain includes platforms that allow the purchase, exchange, transfer or trading of or using digital assets; blockchain-based platform to acquire properties and avail of services. It also includes solutions enabling these activities. Investment FinTech facilitates stock market investments, trading competition and collaboration. This sector includes platforms that allow investment using Bitcoin and access to global capital markets; digital financial advisor; stock picking and portfolio management; mutual funds investment. Meanwhile, InsurTech includes a mobile insurance platform; budget-dependent insurance options and micro-insurance coverage.

The report further expanded the coverage of FinTechs by adding the following verticals:

- Wallets - digital money and wallet providers;
- E-commerce - platforms that enable mobile and digital purchase of products; or solutions that enable such activities;
- Crowdfunding - alternative financing, enables crowdfunding and startup activities to generate capital;
- AI/Big Data - solutions provider employing AI and Big Data analytics; development and deployment of AI and ML solutions;
- KYC/Security - “Know Your Customers”; solutions providers for customer identification and verification; to prevent security issues such as money laundering and to provide a more secure and transparent environment; and
- Neobanks - A neobank (also known as an online bank, internet-only bank, virtual bank or digital bank) is a type of direct bank that operates exclusively online without traditional physical branch networks.

In 2020, additional FinTechs were included in the report, listing a total of 197 platforms, and expanded the number of categories. Mobile wallets and payments together still comprise about 33 percent of FinTechs in 2020 (**Figure 13**). Notable developments would include remittance which has expanded from 8 percent share to 12 percent. The increasing number of FinTechs in the Philippines and the increasing number of verticals not only indicate an evolving FinTech sector but also indicate a diversifying industry in the country.

**Figure 13. Distribution of FinTech companies in 2018**



Source: FinTech Alliance Philippines (2019)

Figure 14. Fintechs in the Philippines, 2020



Source: FinTech Alliance Philippines (2020)

From a list of SEC-registered companies identified to engage in FinTech activities, most of the companies in 2020 are into the issuance of virtual currencies, remittance, credit and finance, and lending. Companies engage in currency exchange and other companies supervised by the BSP follow a little behind. The figures have not seemed to change significantly in 2021 (Table 2).

**Table 2. SEC-registered FinTech related companies, 2020-2021**

Types	2020		2021	
	Number	Incidence (%)	Number	Incidence (%)
Banks	5	6%	6	9%
Marketplace Solutions Providers	2	3%	3	5%
Credit and Finance	10	13%	7	11%
Customer Support	3	4%	2	3%
Lending	10	13%	10	15%
Virtual Currency, E-Money and E-Wallet	12	15%	9	14%
IT Solutions	6	8%	5	8%
Currency Exchange	8	10%	8	12%
Investment	2	3%	1	2%
Insurance	4	5%	3	5%
Payment	3	4%	2	3%
Remittance	12	15%	10	15%
Securities	4	5%	1	2%
Other FIs subject to BSP's supervision and/or regulation	9	11%	11	17%
Others	5	6%	3	5%
Total regardless of type	79		66	

Note: Incidence of do not add up to 100 percent as some companies belong to more than two types

Source: Authors' compilation

Another source of information on the FinTech ecosystem of the Philippines is the Global Fintech Index by Findexable. Findexable listed a total of 170 FinTechs in the Philippines in 2020 and this increased slightly to 183 in 2021. Most of the FinTechs in 2021 are based in NCR (178 of the 183) while the rest are in Cebu. Among the verticals/sectors, Lending and Market Places FinTechs (34%) and Payment and Transfers FinTechs (31%) dominate the industry in 2020. This trend remains the same in 2021 although the shares have declined slightly. In 2021, Banking Technology, infrastructure and automation increased sharply from 2020. This is possibly because of the BSP's policy related to digital banks.

**Table 3. Philippine FinTech Companies listed in Global Fintech Index**

	2020		2021	
	No. of FinTechs	% of Total	No. of FinTechs	% of Total
Analytics & Scoring	3	2	3	2
Authentication, Cyber & Fraud	3	2	3	2
Banking	7	4	7	4
Banking technology, infrastructure & automation	2	1	10	5

Blockchain	16	9	16	9
Insurance	9	5	8	4
Investing & trading (retail & institutional)	1	1	1	1
Lending & Marketplaces	58	34	61	33
Payments & Transfers	53	31	55	30
PFM & Wealth Management	2	1	2	1
Services for SMEs	2	1	2	1
Virtual & cryptocurrency	1	1	1	1
Other FinTech	13	8	14	8
<b>Total</b>	<b>170</b>	<b>100</b>	<b>183</b>	<b>100</b>

Source: Findexable 2020, 2021

#### 4.2. Demand for FinTech

Demand for FinTech looks at 3 aspects: (1) how much local market consumers have adopted FinTech; (2) how much businesses demand FinTech; and (3) demand of financial institutions for FinTech services. Given the paucity of data on FinTech transactions by customers (Consumers, Businesses, FIs and even government), this study looks at proxy indicators for FinTech demand.

Filipinos are still reliant on traditional financial institutions for access to financial services. In 2019, among the financial access points or institutions where people obtain financial services or make financial transactions, Filipinos are more aware of ATMs (90%), pawnshops (82%) and banks (77%). Relative to 2017, it is noticeable that more Filipinos have become more aware of Non-stock savings and loan associations (NSSLA) and e-money agents in 2019, which showed exceptionally substantial growth. In terms of accessibility, pawnshops (61%) and ATMs (51%) are the most accessible for Filipinos in 2019. Highest change in the perceptions (900% increase) on accessibility of insurance agents and NSSLA (233% increase) is observed by Filipinos although these two still remain to be the least accessible. Looking at the use of different access points, most Filipinos transact with pawnshops (31%), bayad centers (27%), and remittance agents (21%) in 2019 (**Table 4**). E-money agents (closest proxy for FinTech services) do reflect the largest increase in usage (300%) which may indicate awareness being translated to usage.

**Table 4. Usage, accessibility, and awareness of access points, 2019**

	Awareness		Accessibility		Usage	
	Distribution (%)	Change 2017-2019 (%)	Distribution (%)	Change 2017-2019 (%)	Distribution (%)	Change 2017-2019 (%)
Bayad Center	63	43	42	75	27	59
ATM	90	48	51	104	15	36
Pawnshop	82	58	61	144	31	138
Bank Branch	77	10	18	-5	15	88
Remittance Agent	65	59	39	129	21	110
Microfinance NGO	59	84	19	111	16	167
Financing Company	59	31	10	43	4	33

Cooperative	52	49	8	100	3	50
E-Money Agent	36	260	6	100	8	300
Money Changer	62	82	3	0	3	200
NSSLA	13	333	1	233	0	-100
Insurance Agent	27	50	1	900	0	-100

Source: Authors' compilation based on BSP 2017 and 2019

One of the strengths that the industry can rely on is the growing participation of consumers in electronic money transactions. From 2018 to 2019 alone, e-money transactions increased by 36 percent from 1.09 to 1.5 trillion pesos. Active e-money accounts, on the other hand, increased by 76 percent (**Table 5**).

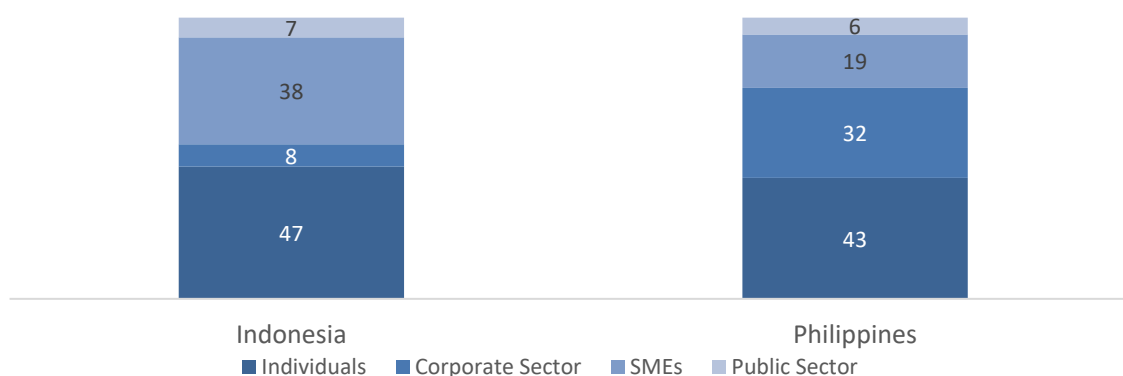
**Table 5. E-Money Transactions**

<i>E-Money</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>Growth Rate 2018-2019</i>
<i>Total amount of transactions (Inflow+Outflow) (in billion PhP)</i>	963	1,090.1	1,485.3	36%
<i>Active E-money accounts (in millions)</i>	2.2	5.0	8.8	76%
<i>Prepaid cards linked to E-money</i>	25.2	28.2	20.6	-27%

Source: Financial Inclusion Dashboard Q4 2019 (in BSP 2020)

The composition of the demand for FinTech services also differs across countries. For instance, in 2019, demand in Indonesia is comprised largely by individual demand at 47 percent, followed by the demand by SMEs at 38 percent, and very small demand from corporate (8%) and public (7%) sectors. In the Philippines, individual demand also dominates (43%), however, the demand from the corporate sector is much larger (32%) than the demand from SMEs (19 percent) (**Table 6**). For the case of the Philippines, the composition of the demand for FinTech may have implications on equity as benefits from the technology would accrue to larger corporations while SMEs would lag behind.

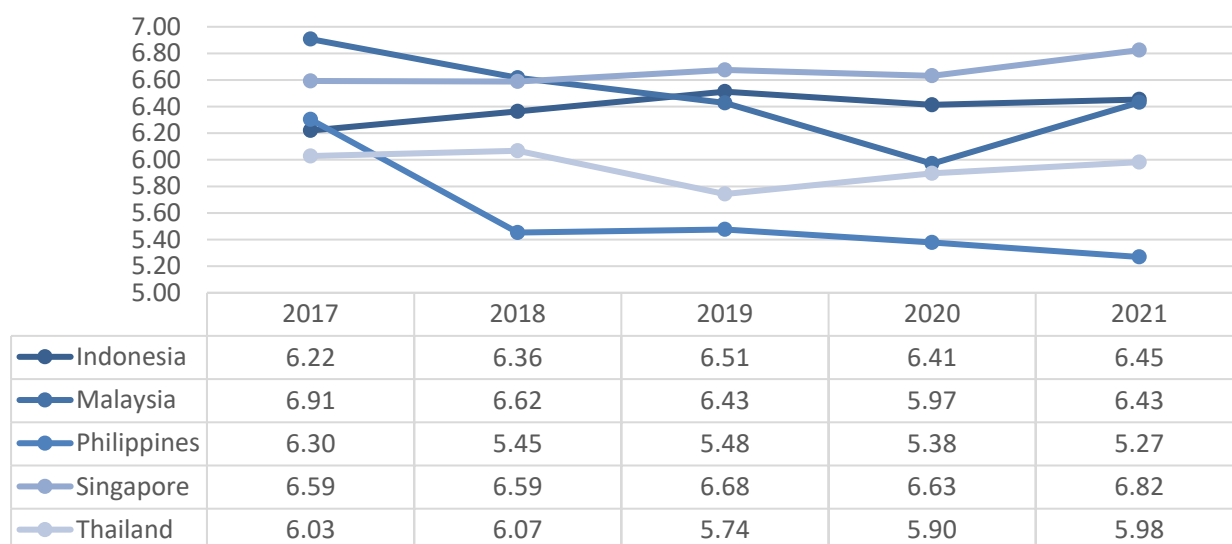
**Table 6. Customers of FinTechs in Indonesia and Philippines, share by sector, 2019**



Source: Soriano et al. (2019)

The demand for FinTech services by companies would be related to their openness to utilize digital technology in their businesses and transactions. According to the IMD World Competitiveness Index in 2021, corporate interest in digital transformation in the Philippines has deteriorated since 2017. The Philippines has fallen significantly behind its ASEAN neighbors in 2021 regarding transforming their companies (**Figure 15**).

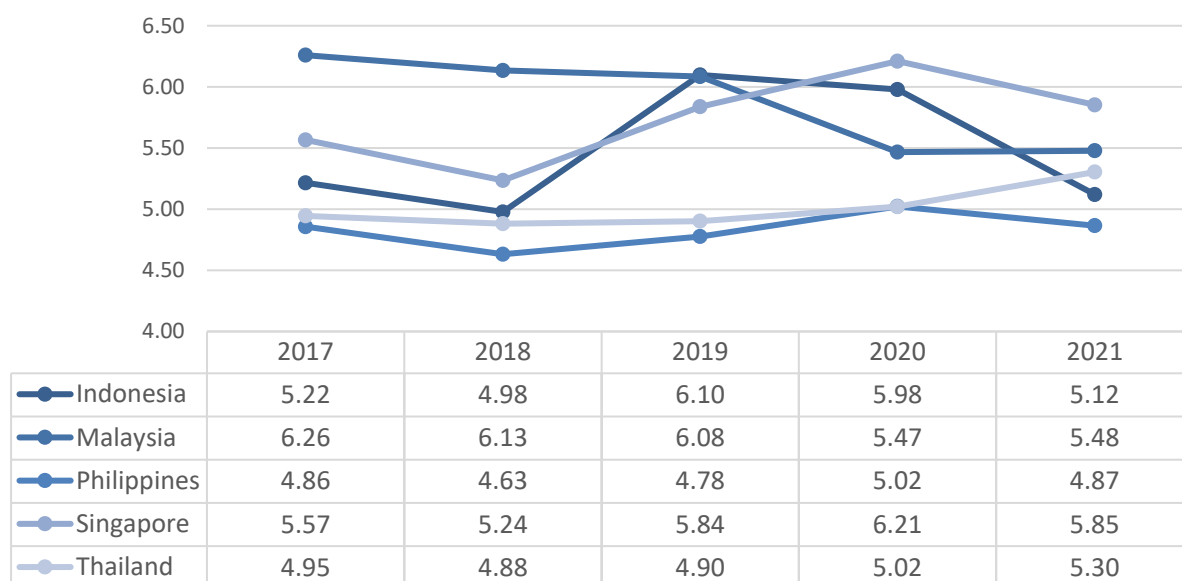
**Figure 15. Digital transformation of companies in ASEAN, 2017-2021**



Source: Author's construct based on IMD World Competitiveness Online 1995 – 2021

Related to the digital transformation of companies would be the adoption of FIRE technologies such as Big Data and analytics as these can be used by companies to understand their FinTech needs. The country also has the lowest usage of big data and analytics. Only Thailand has a continued growth in the use among companies in ASEAN from 2018 to 2021 (**Figure 16**).

**Figure 16. Use of big data and analytics of companies in ASEAN, 2017-2021**

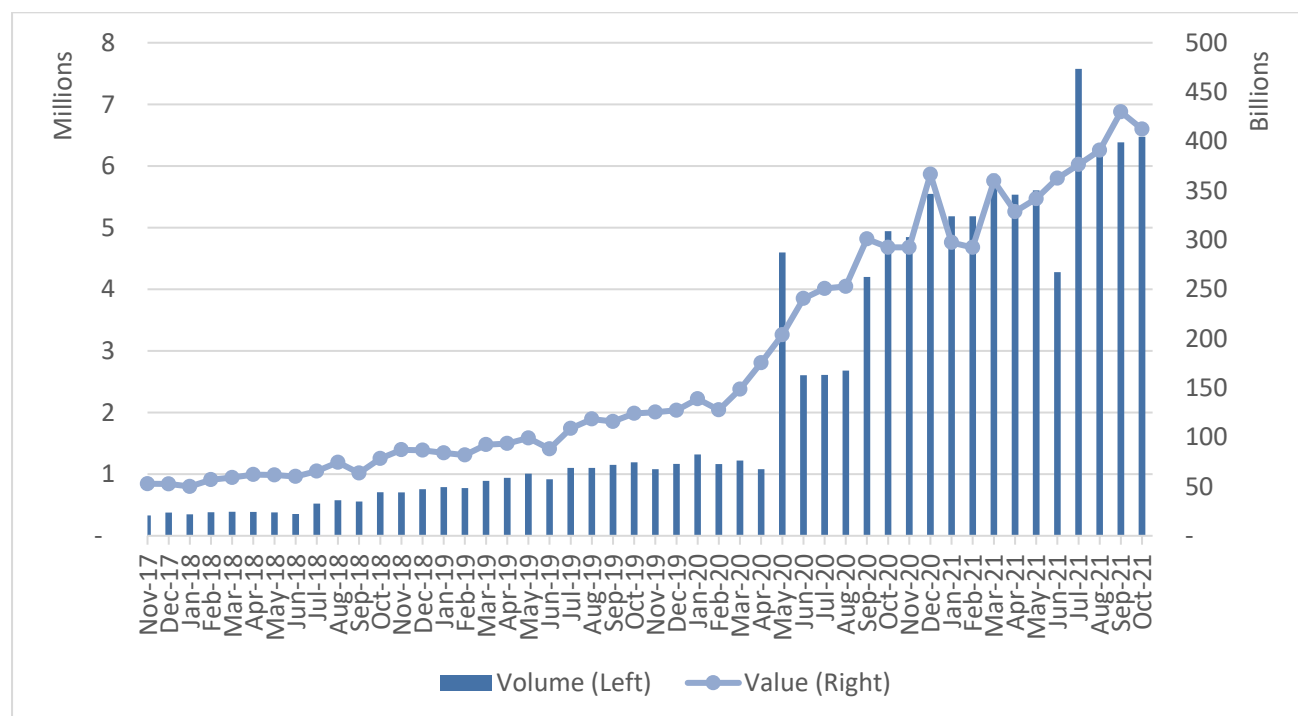


Source: Author's construct based on IMD World Competitiveness Online 1995 – 2021



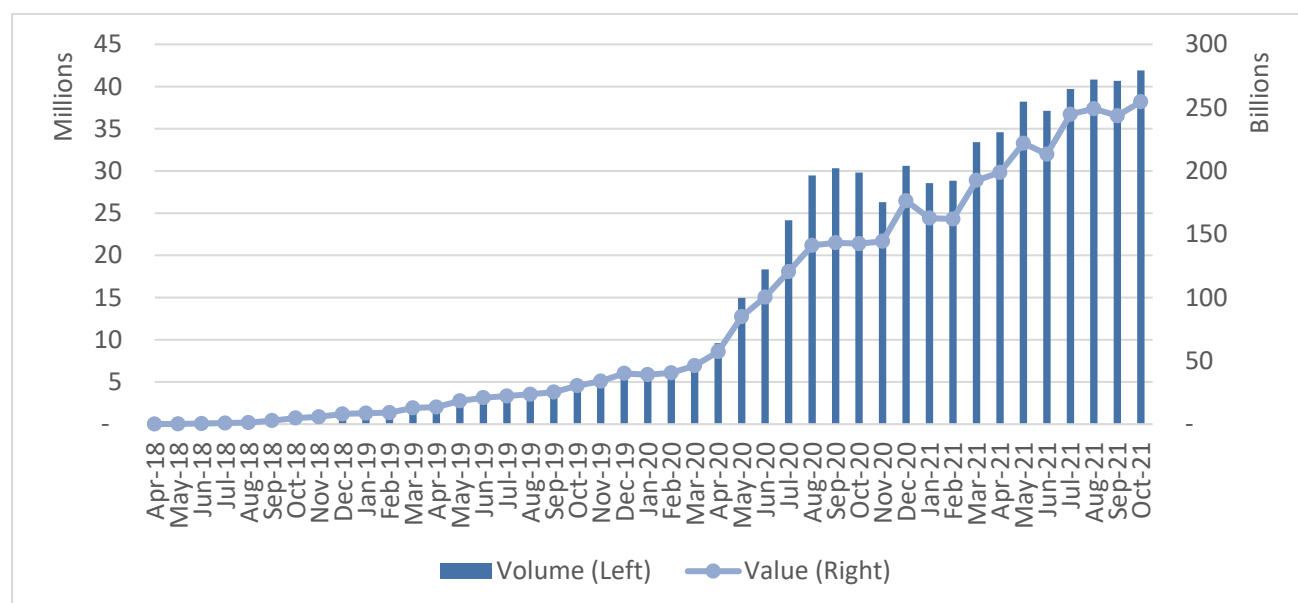
For the Philippines, digital payment platforms have eased a transition from offline to online transactions—and their use has skyrocketed especially during the pandemic. The leading mobile wallet company GCash saw a 700% year-to-year increase in transaction volume in June alone, and doubled its registered users in the first half of 2020 (Susantono 2021). The BSP reports that the number of transactions using the PESONet and Instapay have continued to rise and even grew during the pandemic (Figures 17 and 18). The value of the transactions have consequently risen during this time as well.

**Figure 17. PESONet Volume and Value, 2017-2021**



Source: BSP (2021)

**Figure 18. Instapay Volume and Value, 2017-2021**



Source: BSP (2021)

Data on the demand of Financial institutions for FinTech services are limited but information on their participation in digital payments can be proxied by the number of banks participating in the National Retail Payment System (NRPS). As more banks participate in the NRPS, the ease of conducting banking and financial transactions increases. As of October 2021, there have been 90 PESONet participants composed of 42 Universal or Commercial banks, 17 thrift banks, 27 rural banks and 4 e-money issuers.

As for Instapay, the breakdown is presented below. Table 8 also shows the QR P2P participants and the QR Person-to-merchants (P2M) participants. There is room for expansion in the QR P2P participants and P2M participants.

**Table 7. Instapay participants as of October 2021**

		Sender/ Receiver	Receiver Only	Sender Only	Total
<b>ACH Participants</b>					
	TOTAL	49	10		59
	U/KBs	20	1		21
	TBs	11	4		15
	RBs	8	4		12
	EMI-Others	10	1		11
<b>QR Ph Person-to-Person Participants</b>					
	TOTAL	24	1		25
	U/KBs	12	-		12
	TBs	5	-		5
	RBs	4	-		4
	EMI-Others	3	1		4
<b>QR Ph Person-to-Merchant Participants</b>					
	TOTAL	8	4	2	14
	U/KBs	3	3	2	8
	TBs	1	-		1
	RBs	1	-		1
	EMI-Others	3	1		4

Source: BSP (2021)

### 4.3. Availability of capital

The availability of capital ensures that FinTechs, which are often startups and scale-ups, can fund the expansion of their operations. Using data on investment deals in the fintech sector from PitchBook Data Inc, a private data provider, Cornelli et al. (2021) analyzed the sources of funding of FinTechs all over the world and found that a rapidly increasing trend in terms of the investments in fintech over the last decade. This can be observed in terms of both number and value of deals. **Figure 16** shows that the same trend can be observed for ASEAN countries.

Singapore has seen a sharp increase in Fintech deals since 2010 with the number of deals peaking in 2020 (**Table 8**). Meanwhile, for the other ASEAN economies, the number of deals has also been increasing but at a slower pace. For the Philippines, the number of FinTech deals has been increasing since 2010 until 2016 when it reached a peak of 15 fundraising deals. Since 2016, the number of deals has been declining steadily with a slight rebound in 2020.

**Table 8. Number of Fintech fundraising deals in selected ASEAN countries, 2010-2020**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cambodia	0	0	0	0	0	0	0	1	0	1	2
Indonesia	1	2	4	1	10	18	22	43	46	55	32
Malaysia	0	1	4	8	6	6	7	21	13	15	14
Philippines	0	0	2	5	5	13	15	12	7	9	11
Singapore	3	11	9	24	39	59	87	100	143	133	151
Thailand	0	1	1	1	6	7	15	14	13	9	8
Vietnam	0	1	0	1	3	2	6	1	5	18	4

Source: Cornelli et al. (2021)

In terms of value (**Table 9**), the value of these fundraising deals have also been increasing steadily. **Table 9** reveals that the performance of the ASEAN countries in terms of the value of fundraising deals differs significantly with the number of deals. In 2020, Indonesia has overtaken Singapore in terms of value of FinTech fundraising deals with total value amounting to USD 3,544 MN. The value of FinTech fundraising deals for the Philippines has also been increasing, reaching a peak of USD 288 Mn in 2018. This has declined to USD 74 Mn in 2019 but has increased slightly in 2020 to USD 95 Mn (**Table 9**).

**Table 9. Value of Fintech Fundraising deals in selected ASEAN countries, 2010-2020, MN USD**

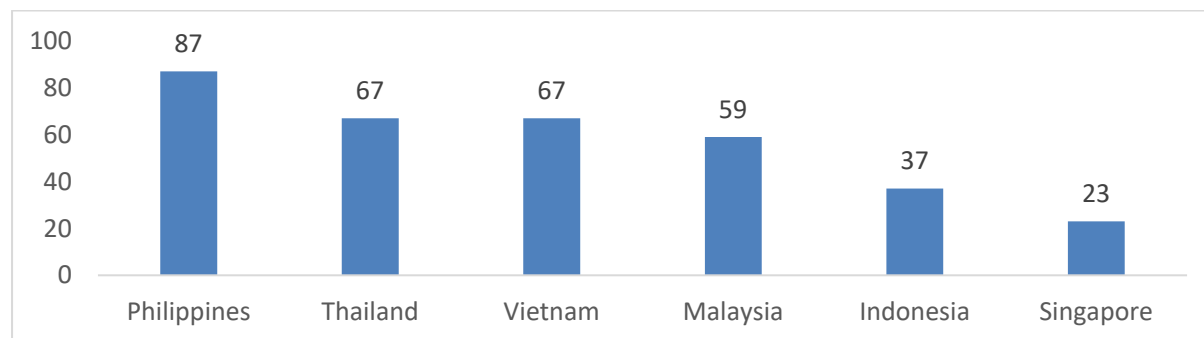
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cambodia	-	-	-	-	-	-	-	0	-	0	6
Indonesia	39	0	95	70	54	10	568	201	1,964	299	3,544
Malaysia	-	5	56	17	178	6	2	33	153	16	10
Philippines	-	-	3	1	4	24	6	26	288	74	95
Singapore	4	73	23	200	367	556	986	405	3,001	5,461	2,091
Thailand	-	-	0	17	9	6	22	9	11	3,075	114
Vietnam	-	-	-	6	2	1	29	-	3	451	1

Source: Cornelli et al. (2021)

With regard to the sources of capital, Cornelli et al. (2021) found that Venture Capital (VC) investment and Mergers and Acquisitions (M&A) are the most common sources of funding. M&A funding is more commonly observed in the United States (US) and the UK while rapid VC activity is observed in China. In terms of the life cycle of the companies, VC funding is more common among younger companies (start-up and early stage) as this allows them to raise small amounts of equity.

VC is also seen as an important source of funding for FinTechs in the Philippines. When asked if there is a need for more venture capitalists for FinTech firms, 87 percent of FinTech respondents from the Philippines mentioned there is a need for more VCs. In contrast, the proportion is only 67 percent for Thailand and Vietnam and 37 percent for Indonesia (**Figure 19**).

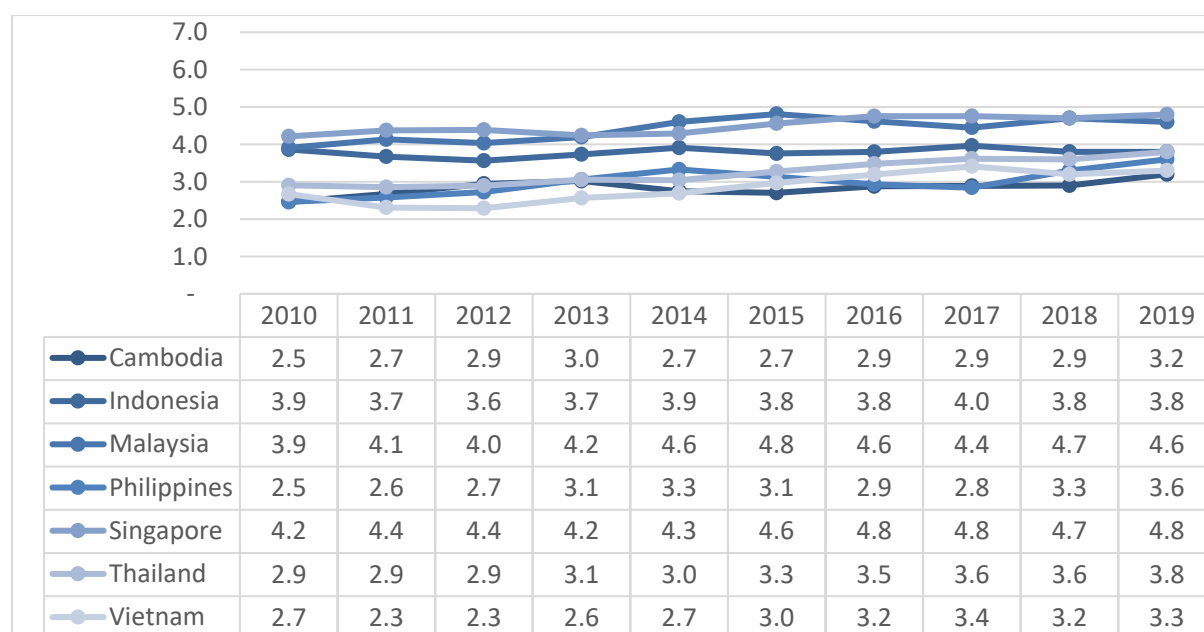
**Figure 19. Need for more Venture Capital investors in Fintech, 2018**



Source: Ernst & Young LLP (2018) ASEAN FinTech Census

Given that VC has been identified as a key source of funds for FinTechs, it would be good to look at indicators related to VC for the Philippines. The Philippines has barely improved in terms of venture capital funding availability from 2010 to 2017 as reflected by the low score in the global competitiveness index. More recently, the Philippines' score has been improving since 2017 with a score of 3.3 in 2018 and 3.6 in 2019. Despite this improvement, the Philippines still needs to improve the availability of venture capital for entrepreneurs as ASEAN countries leading in availability of venture capital have scores above 4.0.

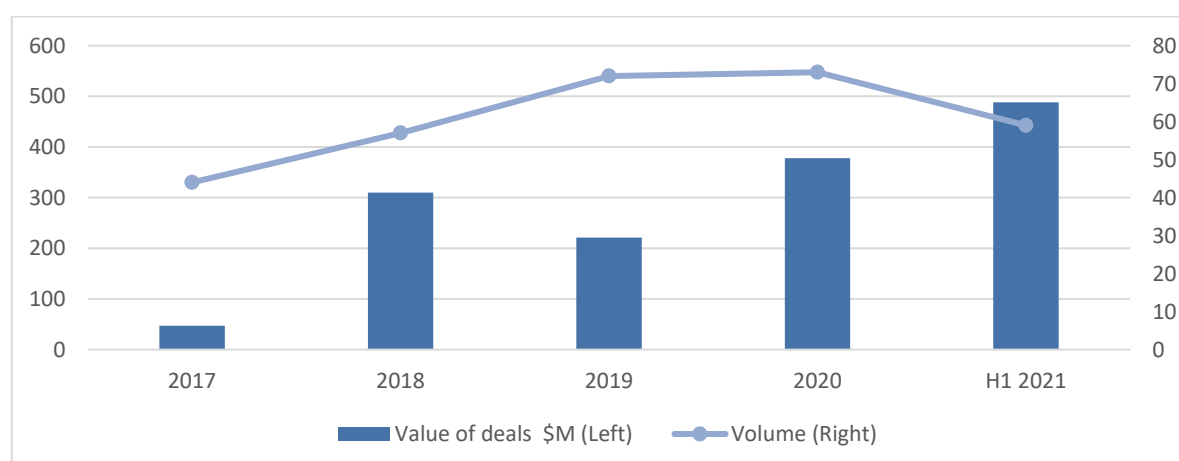
**Figure 20. Ease for entrepreneurs with innovative but risky projects to find venture capital (1-7 [best]), 2010-2019**



Source: WEF Global Competitiveness Report (2019)

Fortunately, Google, Temasek and Bain (2021) have found that in the first half of 2021, confidence of investors has seen a resurgence as indicated by an uptick in deal making and deal activity. The report is optimistic that investment in digital services is on track to hit the highest record in recent years as the first half of 2021 has already surpassed the value of deals in 2020. In addition, HealthTech and Education Technology (EdTech) also saw significant funding activity in the Philippines as players turn towards the second largest market in the region for future growth.

**Figure 21. Deals in digital sector in the Philippines**



Source: Google, Temasek and Bain (2021)

#### 4.4. Talent Formation and the Role of the Academe

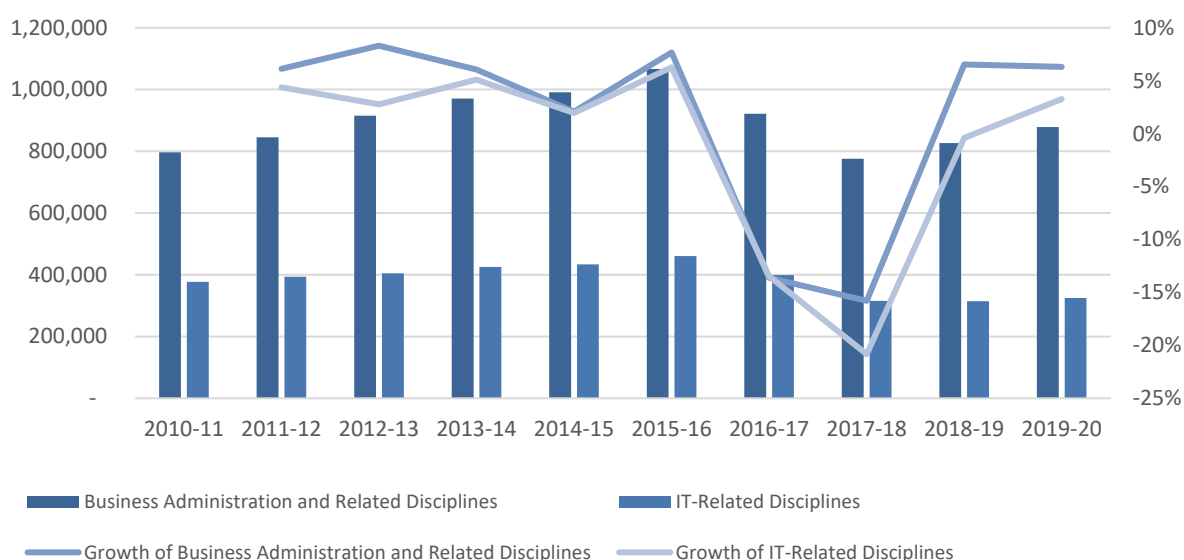
One of the requirements of the FinTech industry to grow and sustain its progress is the availability of competent, talented and skilled workers and entrepreneurs. The availability of highly-skilled technical, financial services, and entrepreneurial workers and stakeholders through academia and organizational development ensures that the industry would be able to expand with low search costs. This pillar of the ecosystem also looks at the ability of the sector to attract, develop (train) and retain their workforce.

Thus, continuous formation of skills for all individuals to fill in the demands in FinTech is an important aspect of talent formation. In the country, enrollment in FinTech-related disciplines, such as business administration and information technology (IT), have fluctuated over the years. Huge drops in the enrollment in these areas have been experienced in Academic Year (AY) 2016-2017 and 2017-2018 but enrollment has recovered in AY 2018-2019 and seems to be sustained since then (**Figure 22**). Business administration courses are important to the sector as these develop business skills that can support the financial services industry in adopting emerging technologies. With the adoption of emerging technologies, workers highly skilled in business are able to differentiate the delivery of services by improving operational efficiency, understanding customers and relationship management (John Wiley & Sons, Inc. 2021).

Meanwhile, Data for graduates of business and technology related courses however show that there might be a limited supply of FinTech talent available in the country. This is because the share of graduates from critical courses related to data science such engineering, mathematics,

physics and IT-related disciplines<sup>6</sup> have not really improved since 2010 (**Table 10**). Data science and analytics are related to FinTech as data analytics is often used in delivering customized financial services to customers. According to the Coursera Industry skills report, CEOs of the Financial Industry have planned to employ cloud computing, cybersecurity, data science, AI, and machine learning technologies by the year 2025 (John Wiley & Sons, Inc. 2021).

**Figure 22. Higher education enrollment by discipline group, AY 2010-11 to 2019-2020**



Source: Authors' construct using CHED data (2020)

**Table 10. Higher Education Graduates by Discipline Group: AY 2010-11 vs 2018-2019**

Discipline Group	2009-10		2018-19	
Grand Total	481,331	100.0	796,576	100.0
Business Administration And Related	117,399	24.4	233,194	29.3
Education Science And Teacher Training	56,419	11.7	169,832	21.3
Engineering And Tech	49,373	10.3	87,083	10.9
It-Related Disciplines	49,786	10.3	81,477	10.2
Other Disciplines	20,779	4.3	46,645	5.9
Medical And Allied	116,380	24.2	45,301	5.7
Agriculture, Forestry, Fisheries	10,043	2.1	26,259	3.3
Social And Behavioral Sciences	12,723	2.6	26,240	3.3

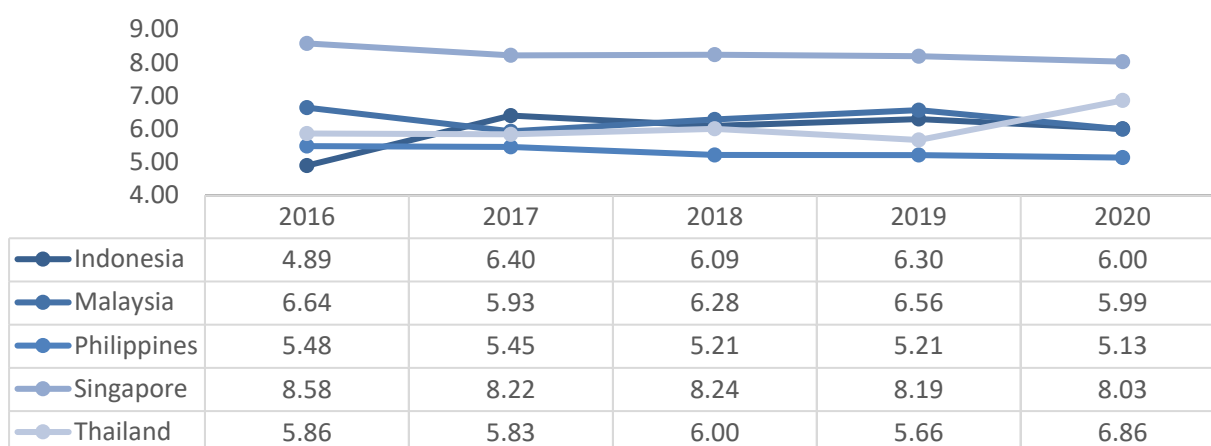
<sup>6</sup> Quismorio et al. (2020) has analyzed the data science demand and supply in the Philippines and found that industrial engineering, computer science, mathematics and physics are among the courses where students are able to perform Data science related jobs.

Service Trades	5,067	1.1	17,690	2.2
Maritime	14,439	3.0	16,871	2.1
Humanities	5,196	1.1	9,397	1.2
Mass Communication And Documentation	5,243	1.1	8,638	1.1
Natural Science	3,949	0.8	8,249	1.0
Architecture And Town Planning	2,274	0.5	5,697	0.7
Fine And Applied Arts	2,346	0.5	3,572	0.4
Law And Jurisprudence	2,829	0.6	3,246	0.4
Mathematics	2,021	0.4	3,192	0.4
Religion And Theology	1,073	0.2	2,059	0.3
Home Economics	1,107	0.2	1,256	0.2
<b>GENERAL</b>	<b>1,587</b>	<b>0.3</b>	<b>575</b>	<b>0.1</b>
<b>TRADE, CRAFT AND INDUSTRIAL</b>	<b>1,298</b>	<b>0.3</b>	<b>103</b>	<b>0.0</b>

Source: CHED (2019)

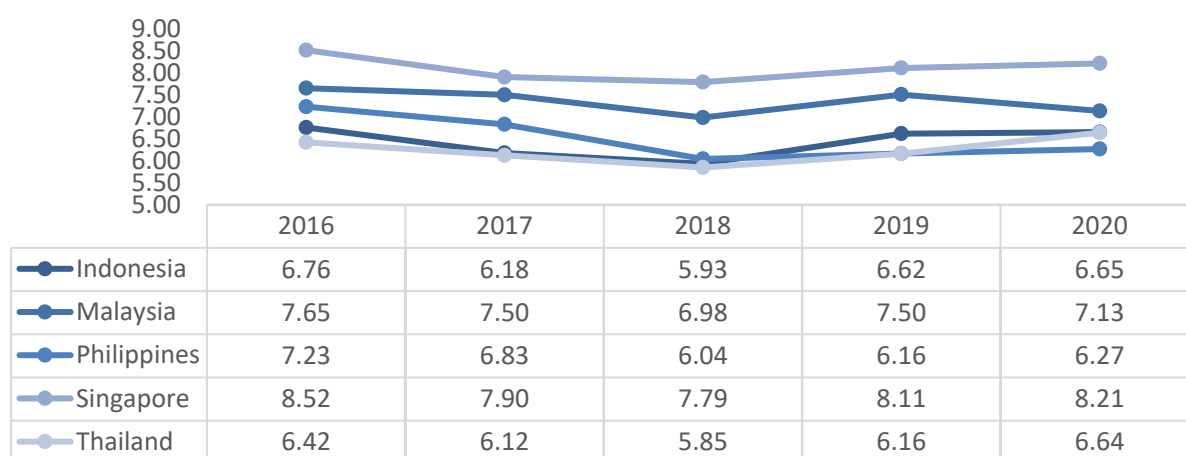
Relative to other countries in the ASEAN, the performance of the country varies across types of FinTech-relevant aspects. This is reflected in the results of the Executive Opinion Survey. With regard to attracting foreign highly-skilled personnel, the country has been behind Singapore, Thailand, Malaysia, and Indonesia since 2017 (**Figure 23**). Regarding the availability of digital/technological skills in the labor force, the country scored 7.23 in 2016 following Singapore (8.52) and Malaysia (7.63). Unfortunately, the trend has been decreasing since 2016 with the 2020 score of the country being 6.27. This puts the country last among the 5 ASEAN countries that have data in this survey (**Figure 24**). The country, however, is performing well in terms of skilled labor (**Figure 25**). Since 2016, the Philippines has consistently scored above 6.7 in this aspect but in 2020, Singapore overtook the Philippines as its score slipped to 6.62.

**Figure 23. Foreign highly-skilled personnel (digital) are attracted to your country's business environment (based on an index 0-10 [best]), 2016-2020**



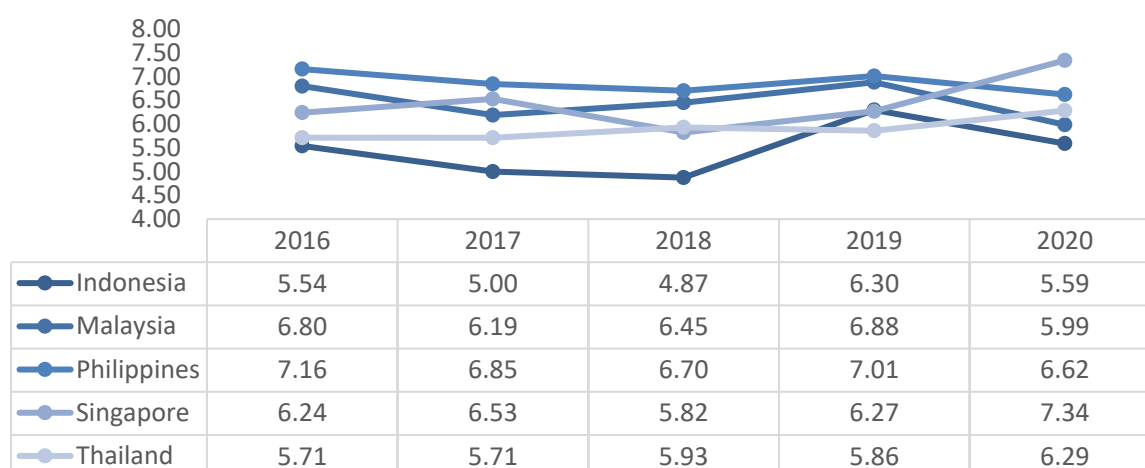
Source: Author's construct based on IMD World Competitiveness Online 1995 – 2021

**Figure 24. Digital and technological skills are readily available (based on an index 0-10 [best]), 2016-2020**



Source: Author's construct based on IMD World Competitiveness Online 1995 – 2021

**Figure 25. Skilled labor are readily available (based on an index 0-10 [best]), 2016-2020**



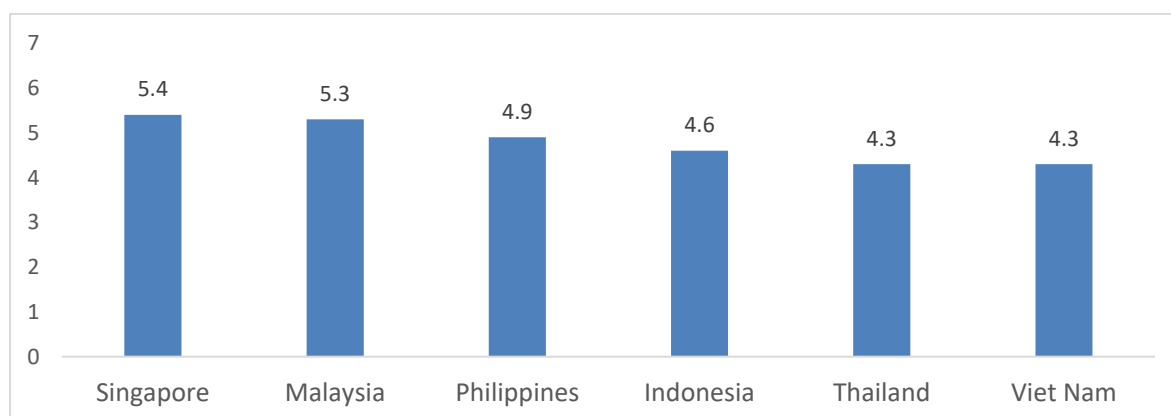
Source: Author's construct based on IMD World Competitiveness Online 1995 – 2021

The role of the academe in the formation of talents and skilled individuals is very important for the growth of the FinTech industry. In the Philippines, there are a number of higher educational institutions offering degrees related to business and IT related. Very few, if none, however, are directly dedicated to FinTech. Two of the country's top universities initiated activities that could address the demand of the industry. One is the Ateneo de Manila University that has set up the first university-based blockchain lab in the country; this, however, has been put on hold indefinitely. The other is the University of the Philippines, with its Junior Finance Association and in partnership with the Union Bank of the Philippines' FinTech group, which organized a FinTech immersion program for finance students.

As an indicator of the strength of the country's training institutions, Wiley (2021) in its Digital Skills Gap Survey presents the extent to which companies invest their own resources in digital training and employee development. **Figure 26** displays the extent to which employees receive digital training among ASEAN economies available in the report. The Philippines scores 4.9 which indicates a relatively strong training environment among corporates.



**Figure 26. Extent of employee digital training by corporates, 2019**



Source: John Wiley & Sons (2021) Digital Skills Gap Index 2021

#### 4.5. The Role of the Government

Three of the government agencies that directly supervise and regulate the FinTech industry in the country are the BSP, SEC, and the Insurance Commission (IC). The BSP, with its mandate, “continues to create a supportive environment for financial inclusion”, and “aims to see a digital financial ecosystem with the right mix and range of financial service providers, digital solutions and delivery channels to promote the efficiency and reach of financial products and services” (BSP 2018, p. 6). On the other hand, the SEC regulates the lending and other financial industries, while the IC regulates and guides the insurance, pre-need, and home maintenance organizations (HMOs). Other relevant agencies, one way or another, also regulate the FinTech industry on matters concerning data privacy, security, money laundering, and information systems (**Table 11**).

**Table 11. FinTech regulators and their functions**

Regulator	Functions
BSP	Supervises bank and non-bank e-money institutions (EMIs), virtual asset service providers (VASPs), remittance agents, remittance platform providers, payment systems operators, and banks including digital banks
SEC	The main regulatory body for lending and financing companies; regulates securities offering and sale and investment activities
IC	Oversees and regulates insurance firms, health maintenance organizations (HMOs) and pre-need companies in the Philippines
DICT	Formulates, recommends, and implements policy and program frameworks for the rapid development and improved global competitiveness of the ICT industry, and ensure efficient and effective ICT infrastructure and information systems
NPC	Matters involving data privacy
NTC	Regulation of value-added services (including mobile applications and online platforms used for the delivery of financial services)
AMLC	Compliance with the AML, and matters concerning financing of terrorism (CFT)

Note: AMLC – Anti-Money Laundering Council, BSP – Bangko Sentral ng Pilipinas, SEC – Securities and Exchange Commission, IC – Insurance Commission, DICT – Department of Information and Communications Technology, NPC – National Privacy Commission, NTC – National Communications Commission Source: Author’s compilation

Despite the various agencies regulating the sector, there is a formalized framework for coordination among them. Created in 2014, the Financial Sector Forum is a voluntary

interagency committee, composed of the BSP, SEC, IC, and Philippine Deposit Insurance Corporation (PDIC). It aims to provide an institutionalized regulatory framework for coordinating the supervision and regulation of the financial system, facilitate consultation and the exchange of information and ideas among regulators and provide a platform to harmonize the regulation of financial products offered by the various types of financial institutions.

#### 4.5.1. Support to innovation, infrastructure, and promotion

In 2015, BSP launched the National Retail Payment System (NRPS) *“to create a safe, efficient, and reliable electronic retail payment system that is interconnected and interoperable”*. It was operationalized through the BSP Circular No. 980, issued in 2017 (BSP 2018, p. 8). The NRPS is viewed to have had a key role in fostering digital payments and supporting the growth of FinTechs especially payments and e-wallets.

### Box 2. National Retail Payment System

NRPS promotes, among others, interoperability—the state when end-users or consumers are able to transfer funds from one account to another account in any participating BSP supervised financial institution (bank or electronic money issuer). By enabling interoperability, sustained adoption of electronic payments is plausible as electronic transactions are made more convenient. NRPS likewise facilitates and supports the delivery of a wide range of financial products that cater to the needs of all users, especially the small-value, high frequency payers of the low-income segment. As more end-users or consumers avail of electronic payment services, the growth in transaction volume will help achieve economies of scale, which may further bring down cost to the consumers.

#### Automated Clearing Houses (ACHs) under the NRPS

##### PESONet

The Philippine EFT System and Operations Network (PESONet), the first ACH under the NRPS, was launched on 08 November 2017. It is a batch electronic fund transfer (EFT) credit payment scheme, which can be considered an electronic alternative to the paper-based check system. Under the rules of said ACH, the fund transfer and/or payment instructions will be processed in bulk and cleared at batch intervals. Each payee will then receive the full value in their account within the same banking day, provided the payment instruction was sent within the cut-off time.

##### InstaPay

InstaPay is a real-time low-value EFT credit push payment scheme for transaction amounts up to P50,000. This retail payment system, launched on 23 April 2018, is designed to facilitate small value payments that will be especially useful for the purchase of retail goods, paying toll fees and tickets, as well as for e-commerce, which shall enable, among others, Micro, Small and Medium Enterprises (MSMEs).

Source: BSP (2021)

The BSP also issued several other policies, such as the BSP Circular Number 1108, series of 2021, which regulates the operation of virtual asset service providers (VASPs). The Circular redefines virtual currency exchange as VASPs and virtual currencies (VCs) as virtual assets (Vas), directly regulating the use and exchange of cryptocurrencies or crypto assets. A number of other existing, amended, or newly created regulatory and provisional laws mandate different agencies, individually or collaboratively, to support the growth of FinTechs in the country. For instance, the Philippine government encourages the development of emerging industries, including FinTechs, particularly through the Philippine Innovation Act of 2019

(Republic Act No. 11293), which promotes the diffusion of knowledge as a driver of national development and provides technical and financial support for scaling up and marketization of industries.

Similar to the BSP, the Insurance Commission has issued a number of Circulars guiding the operation of insurance companies and Insurance Technology (InsurTechs) in relation to e-commerce and the use of mobile and digital applications, capturing of digital or electronic consents, and the adoption of regulatory sandbox for the insurance industry, including pre-need companies and health maintenance organizations (HMOs) (**Annex 1**).

During the pandemic, the BSP implemented some measures that encouraged financial institutions to lend to MSMEs with lesser requirements. The BSP, recognizing the Philippines as one of the pioneers of e-money since the early 2000s, allows innovations to prosper. The test-and-learn approach allows industries to test new products and technologies in a controlled environment that allows the risks to be managed. The BSP adopted the *Coopetition* approach, where players are allowed to compete based on their products and services and cooperate on areas that need to be improved. The public and private coordination in a regulatory sandbox, brings the FinTech stakeholders to learn together.<sup>7</sup>

## 5. SWOT Analysis

### 5.1. Strengths

One of the strengths that the industry can rely on is the growing participation of consumers in e-money transactions. From 2018 to 2019 alone, e-money transactions increased by 36 percent from 1.09 to 1.5 trillion pesos. Active e-money accounts, on the other hand, increased by 76 percent (**Table 12**).

**Table 12. E-Money Transactions**

E-Money	2017	2018	2019	Growth Rate 2018-2019
Total Amount Of Transactions (Inflow+Outflow) (In Billion Php)	963	1,090.1	1,485.3	36%
Active E-Money Accounts (In Millions)	2.2	5.0	8.8	76%
Prepaid Cards Linked To E-Money	25.2	28.2	20.6	-27%

Source: Financial Inclusion Dashboard Q4 2019 (in BSP 2020)

#### 5.1.1. Reasons for using mobile phone and internet for financial transactions

One source of opportunities that FinTech institutions or aspiring providers can benefit from are the incessant and increasing financial needs and behaviors of the people. For instance, from 2017 to 2019, the number of people who used their regular income to spend on expensive things and unexpected incidents increased by 40 and 60 percent, respectively. The number of people who borrowed to meet these planned and unplanned spending, as well as for putting up a business, also increased, with the majority of which are informally acquired (i.e. family and friends) (**Table 13**).

<sup>7</sup> Based on KII interview conducted in October 2021.

**Table 13. Composition of financial needs and sources of spending, 2017-2019**

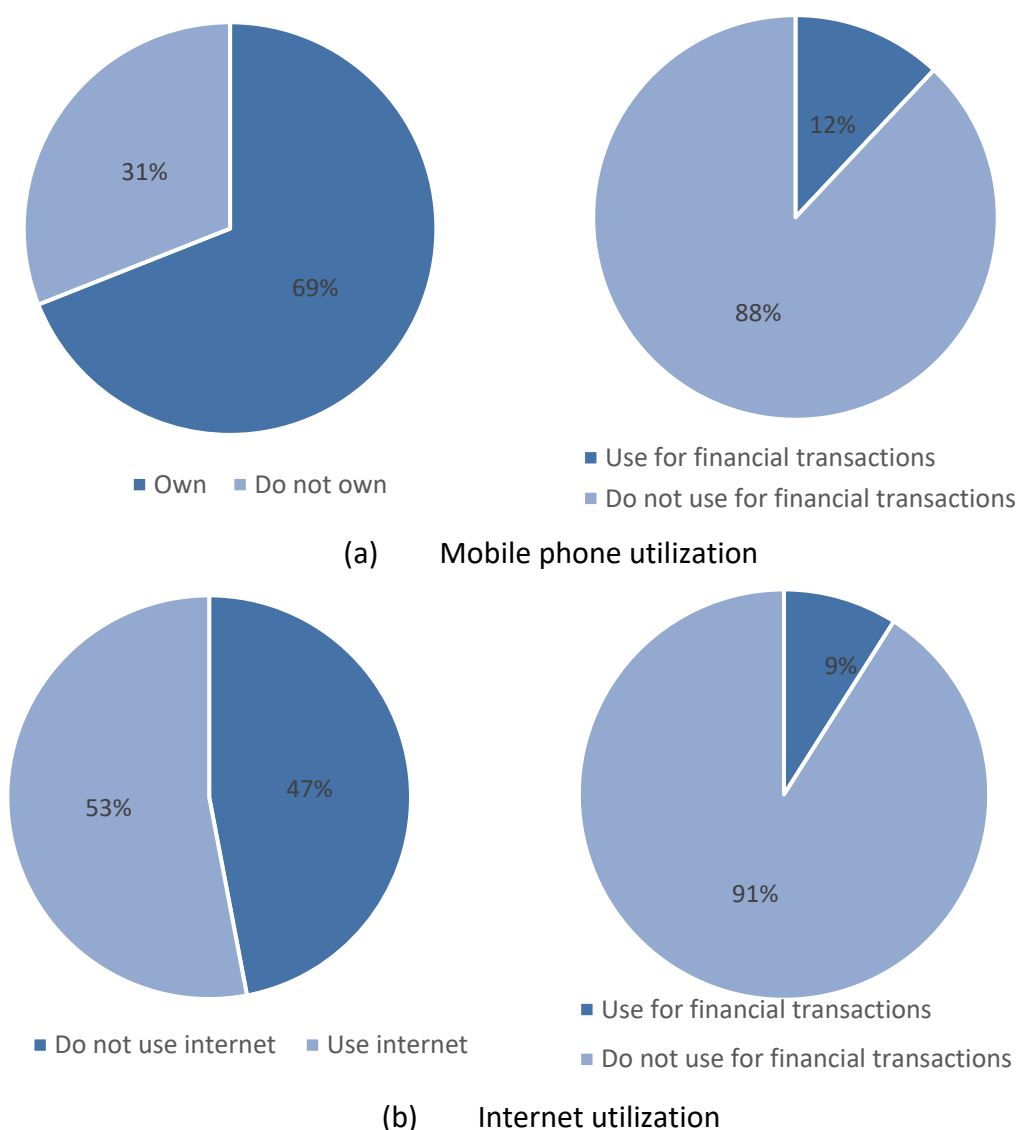
Mechanism	Spent money on expensive things (planned to buy or pay) (%)			Spent money to cope with effects of expensive risks (unexpected incidences) (%)			Unable to meet weekly or monthly spending needs (%)			Spent to start or put up a business (%)		
	2017	2019	Change	2017	2019	Change	2017	2019	Change	2017	2019	Change
Borrowed	13	16	23	34	32	-6	45	44	-2	53	56	6
Used regular income	30	42	40	20	32	60	17	28	65	18	19	6
Own savings	50	28	-44	26	20	-23	17	13	-24	28	14	-50
Requested financial assistance	8	5	-38	30	17	-43	18	10	-44	3	4	33
Income from sideline work	13	6	-54	4	3	-25	5	7	40	3	3	0
Source												
Salary/income	-	17	-	-	10	-	-	7	-	-	2	-
Savings (informal)	49	33	-33	23	20	-13	18	16	-11	25	13	-48
Family, friends, relatives	47	33	-30	68	49	-28	72	62	-14	29	33	14
Microfinance NGOs	2	6	200	5	5	0	2	4	100	32	32	0

Source: Authors' compilation based on BSP 2017 and 2019

Another source of opportunities springs up from the fact that more people have access to technologies, such as smartphones and internet, which are important infrastructural factors for people to get acquainted with more digital financial products and services.

In 2019, 69 percent of adult Filipinos owned mobile phones, however, only 12 percent of them used mobile phones for financial transactions. On the other hand, 47 percent of the adult Filipinos used the internet, however, only 9 percent of them used the internet for financial transactions. 89 percent of internet users access the internet through mobile data and 11 percent with home subscription. Others access the internet by visiting an internet shop (5%) or connecting to a public WiFi (5%) (BSP 2017 and 2019) (**Figure 27**).

**Figure 27. Mobile phone and internet usage for financial transactions, 2019**



Source: Authors' rendition based on BSP 2017 and 2019

In addition, the number of mobile phone owners and internet users across demographic groups is quite remarkable, although at varying levels. Across socioeconomic classes<sup>8</sup>, the incidence of ownership and access are higher in classes ABC1 and C2, however, the incidence in lower classes are not negligible. This trend is also true across geographical groups, with Visayas and Mindanao having non-negligible incidence ownership and access levels despite lagging behind Metro Manila and Luzon areas. Similarly, urban and rural areas do not seem to differ much. In terms of age groups, on the other hand, the concentration of mobile phone and internet users are higher in the younger age groups, which may indicate more future opportunities as this trend may most likely continue (**Table 14**).

<sup>8</sup> Following the standard: ABCDE socioeconomic classification – with the AB class roughly corresponding to those with monthly income levels 100,000 PhP and up; Class C with incomes 20,000 to 100,000; and class D and E with incomes 10-20,000 or less than 10,000 PhP, respectively ([https://microfinancecouncil.org/wp-content/uploads/2012/11/DP-2012-3\\_Multiple-Borrowing\\_Household-Survey.pdf](https://microfinancecouncil.org/wp-content/uploads/2012/11/DP-2012-3_Multiple-Borrowing_Household-Survey.pdf))

**Table 14. Profile of mobile phone owners and internet users, 2019**

Categories		Smartphone Ownership	Internet Usage
Socioeconomic Class	ABC1	98	98
	C2	78	78
	D	53	56
	E	42	43
Area	Metro Manila Area	72	75
	North and Central Luzon	60	62
	South Luzon	60	61
	Visayas	36	40
	Mindanao	34	37
Locale	Urban	61	64
	Rural	42	43
Age	15-19	65	80
	20-29	73	74
	30-39	58	55
	40-49	35	34
	50-59	22	21
	60 and above	13	8

Source: Authors' compilation based on BSP 2017 and 2019

The number of mobile phone and internet users continue to grow annually. Since 2018, the average number of mobile subscribers is 150 million (138% of the total population, which means that some people have more than one subscriptions), which increases annually at a rate of 13.7 percent on average. Similarly, the country has an average of 73 million internet users that grow at an average rate of 3.6 percent. On the other hand, 76 million or 70 percent of the population are active social media users, which grows at 11 percent annually. With the growth of population, it can be anticipated that the number of mobile subscribers and internet users will also grow (**Table 15**). This represents an opportunity for the FinTech and tech industry, in general, of a potential market to penetrate.

**Table 15. Profile of mobile subscriptions and internet usage, 2018-2021**

	2018	2019	2020	2021	Average	Average Growth (2018-2021)
Population (millions)	105.7	107.3	108.8	110.3	-	1.4%
Urbanization (%)	44.0	47.0	47.0	47.6	46.4	2.7%
Mobile subscriptions and connections (millions)	-	124.2	173.2	152.4	149.9	13.7%
vs population (%)	-	116.0	159.0	138.2	137.7	12.0%
Internet users (millions)	67.0	76.0	73.0	73.9	72.5	3.6%
Penetration (%)	63.0	71.0	67.0	67.0	67.0	2.4%
Active social media users (millions)	67.0	76.0	73.0	89.0	76.3	10.5%
Penetration (%)	63.0	71.0	67.0	80.7	70.4	9.2%

Source: Authors' compilation based on Digital 2018, 2019, 2020, and 2021 reports

Forward-looking and coordinated government regulators is also a strength of the industry. The open and supportive regulatory environment of the FinTech sector can be considered a strength. The regulatory sandboxes for FinTech and InsurTech allows for innovation in the delivery of digital financial services without sacrificing security of the market. In addition, the BSP has outlined a number of activities and programs aimed at strengthening the digital payments sector.

Regulators are generally receptive to the introduction in the Philippines of fintech products and services that have been introduced in many other countries, subject to the regulator's imposition of certain conditions for the protection of the public. Regulators view fintech as a way of pursuing financial inclusion through digital technology. Having said that, the process of getting such regulatory confirmation/approval of a fintech product or service that is not specifically governed by existing laws and regulation usually takes time, and the grant of confirmation/approval is subject to the regulator's sole discretion.

In the case of the BSP, for example, it is known for encouraging innovations in financial services. As an example, with the advent of e-money in the Philippines, the BSP has established a new supervisory unit bringing together the skills of regulators from its information technology area as well as the banking supervisory area. Through this newly established supervisory unit, the BSP strengthened its regulatory capacity to oversee e-money issuers. The BSP is closely monitoring the progress of FinTech /InsurTech in the Philippines and its impact on the local banking industry.

The Intellectual Property Office of the Philippines (IPOPHL) fully supports technological innovation, including financial technologies. To this end, the IPOPHL has established a nationwide network of Innovation and Technology Support Offices, which assists local innovators in claiming and protecting their intellectual property rights.

## **5.2. Weaknesses**

Among the weaknesses that the FinTech sector include issues arising from the use of access points and distrust from using technologies.

From 2017 to 2019, the levels of awareness, accessibility, and usage of access points have remarkably increased. Of the total number of Filipino adults who transacted with access points in 2019, 37 percent encountered issues, significantly larger than those who encountered issues in 2017, which is only about 6 percent. Although 84 percent of the issues encountered are resolved, a noticeable 16 percent are not resolved. Of those who encountered issues, only 10 percent contacted the regulators, as many of them either are not aware that regulators can be contacted (40%), do not know how to contact the regulators (35%), want to avoid hassle (35%), or have no knowledge about the regulators' contact information (32%) (BSP 2019).

Similarly, despite the increasing number of Filipino adults owning mobile phones and having access to the internet, only very few of them actually used these technologies to make financial transactions. About half of the mobile phone and internet users are not aware that these can be used for financial transactions, while others do not trust using these technologies. Some experience unreliable internet connection and others prefer to transact at the branch or through ATM (**Table 16**).

**Table 16. Reasons for not using mobile phones and internet for financial transactions**

	Mobile phones (%)	Internet (%)
Not aware that it can be used	52	48
No trust	32	39
Weak signal or lacking	16	22
Prefer to transact at branch or ATM	14	14

Source: Authors' compilation based on BSP 2017 and 2019

Another factor that may restrict the growth of FinTech in the country are the poor connectivity and high cost of internet. As October 2021 alone, the country ranks 67<sup>th</sup> in the global ranking in terms of the speed of mobile download, at only 38.12 Mbps, way lower than the global average and of Singapore, which tops the ASEAN-5. In terms of broadband download speed, the country falls 67<sup>th</sup> with 71.08 Mbps, and only fourth among the ASEAN-5. In terms of cost, the Philippines ranks 32<sup>nd</sup> globally and 5<sup>th</sup> in the ASEAN-5, as having the costliest monthly internet cost at 44.93 USD or PhP 2,280.16<sup>9</sup> (Table 17).

**Table 17. Speed and cost of internet as of October 2021**

	Mobile Download Speed (Mbps)	Global Rank (out of 141)		Fixed Broadband Download Speed (Mbps)	Global Rank (out of 181)		Cost (USD\$)	Global Rank (out of 109)
Global	68.44			116.86			39.95	
<b>Top 5</b>						<b>Bottom 5</b>		
UAE	273.87	1	Monaco	189.27	1	Ukraine	6.04	109
South Korea	214.47	2	Hong Kong	219.05	2	Russia	6.77	108
Qatar	178.83	3	Singapore	112.81	3	Romania	8.39	107
Norway	178.7	4	Romania	173.88	4	Moldova	9.88	106
Kuwait	170.67	5	Switzerland	152.51	5	India	10.36	105
<b>ASEAN-5</b>								
Singapore	107.12	18	Singapore	257.15	3	Thailand	20.23	82
Thailand	67.35	36	Thailand	223.72	8	Malaysia	28.92	66
Philippines	38.12	67	Malaysia	110.84	46	Indonesia	32.38	59
Malaysia	34.46	77	Philippines	71.08	67	Singapore	32.77	58
Indonesia	23.1	108	Indonesia	29.55	116	Philippines	44.93	32

Note: The higher the rank, the costlier the internet is. Bottom 5 are the countries with cheaper internet cost.

Source: Authors' compilation based Speedtest Global Index (2021) and Numbeo (2021)

In an interview conducted in October 2021, the BSP expressed that poor connectivity is an important factor since most FinTech services are powered by the internet, and that they are trying to find a solution that will allow offline transactions. The BSP also cited concerns regarding the minimum maintaining balance and dormancy rates for the maintenance of

<sup>9</sup> Based on the average Philippine peso per US dollar rate for October 2021 (Bangko Sentral ng Pilipinas, Statistics - Exchange Rate, retrieved from <https://www.bsp.gov.ph/SitePages/Statistics/ExchangeRate.aspx> on November 19, 2021).



accounts. Considering this, it said it is developing policies for the opening of basic deposit accounts and allowing the opening of e-wallets or e-money accounts as cost-effective means of owning transaction accounts that require minimal or even zero balance requirements. In addition, a different interview, FinTech players TagCash and CIS Bayad Inc. stated that lack of trust and people's preference to cash, are also considered to hinder the acceptance and growth of FinTech.

The regulators and FinTech players also recognized that competition among industry players should be improved, as big companies take the lead in the industry, making it more difficult for the small players to penetrate the market.

There still remain some gaps in the policy and regulatory environment. McKenzie (n.d.) identified the lack of formal regulation or policy on FinTech/Insurtech as a weakness to the sector. This is because it makes approval for fintech services solely reliant on the regulator. What is ideal is a regulation/policy that sets principles or conditions for prospective fintech players to follow.

Another weakness would be the existence of archaic policies being imposed on the new sector. McKenzie (n.d.) identified provisions in Presidential Decree No. 1718 declared in 1980 to be detrimental to the sector. Section 2 of the law prohibits the transfer of documents or information relating in any manner to any business carried in the Philippines, unless it complies with the following:

1. consistent with and forms part of a regular practice of furnishing to a head office or parent company or organization outside of the Philippines;
2. in connection with a proposed business transaction requiring the furnishing of the document or information required or necessary for negotiations or conclusions of business transactions; or
3. in in compliance with an international agreement to which the Philippines is a party made pursuant to the authority granted by the designated representative of the President of the Philippines.

McKenzie (n.d.) cautions that while Presidential Decree No. 1718 has not been strictly enforced, it nevertheless imposes criminal penalties for violations of it.

### **5.3. Opportunities**

#### **Relatively open digital environment for integration with other countries in the region.**

Sustained use of digital payments and FinTechs after the onset of the COVID-19 pandemic in the country in 2020 has forced people to use alternative means of doing things such as purchasing. The use of online marketplaces and e-money for buying items have increased in considering health and safety. This, accordingly, serves as a catalyst for the industry to grow faster as anticipated prior to the pandemic.

In addition, the incentives, such as tax incentives, provided by the government as a support for the SMEs during the pandemic have also encouraged companies to recalibrate and move their timelines at an earlier period to avail of these incentives, and launched their products and services. In anticipation of the developments during the pandemic, both the regulators and FinTech players are optimistic that this trend will continue in the coming years.

Other agencies supporting sectors related to FinTech such as Data Science, AI, e-commerce, cloud computing and others. Examples of such initiatives are the Department of Trade and Industry's Artificial Intelligence Roadmap and E-Commerce Roadmap which was launched in 2021. According to DTI (2021a), the roadmap was launched to ensure that the country has clear metrics in terms of tracking the progress towards a competitive AI Economy with respect to the global arena. Central to this roadmap is the creation of a National Center for AI Research (NCAIR) that houses full-time scientists and research engineers, serving as the Nexus to AI competitiveness of the country. Among its goals are to assist MSMEs interested in using computational tools, especially AI technology, to help them improve their efficiency and productivity. The roadmap identified 4 dimensions for AI readiness, namely: (1) Digitization and Infrastructure, (2) Research and Development, (3) Workforce Development, and (4) Regulation. These dimensions are supported by seven 7 measurable strategic imperatives and 42 strategic tasks.

#### 5.4. *Threats*

**Limited venture capital availability to support the growth of start-ups.** CEOs of Financial Institutions express concern about the lack of digital and technological talent, recognizing that having the right skills can make or break their efforts to effectively adopt new technologies (John Wiley & Sons, Inc. 2021).

The rapidly evolving environment of the Fintech landscape may be a threat to the sector if there is no means of measuring and understanding its performance. This study relied on a combination of sources and proxy indicators to describe the FinTech environment. Most of these sources have been obtained from international sources which produced some of these indicators through perception surveys. While these sources of information have proven to be useful, there needs to be a more detailed and systematic source of information on FinTech in order for the progress of the sector to be tracked.

Competition from other ASEAN nations positioning themselves to be FinTech hubs in the region. Aside from Singapore which is already a FinTech powerhouse, Indonesia is already positioning itself in the region scoring high in the Findexable FinTech index. Vietnam is also worth noting as it has also been identified by Findexable as among the countries to watch. The Philippines needs to improve its environment for attracting businesses and foreign workers in order to increase the scale of entrepreneurs and FinTechs in the country.

## 6. **Conclusions and Recommendations**

The Philippines has a strong FinTech industry as indicated by an increasing number of FinTechs (particularly in payments, lending and Banking technology verticals) and increasing capitalization<sup>10</sup>. There is a sharp increase in demand as indicated by digital payments driven by the pandemic restrictions. Studies (Google Temasek & Bain 2020; 2021) have shown that digital payments adoption of e-wallets, digital payments and digital technology have increased and will be sustained in the next two years. However, the ecosystem needs to be strengthened in order for the sector to flourish. While the sector benefits well from a coordinated and forward-looking group of regulators, there needs to be some review of policies and laws. In particular, there needs to be a policy related to FinTech that would define and monitor the

---

<sup>10</sup> A list of FinTech companies compiled from SEC, Findexable and FinTech reports are available upon request from the authors.

progress of the sector. The lack of statistics on the sector prevents a thorough assessment of its progress. There also needs to be policies and incentives targeting the lack of funding and talent that the sector can tap.

The FinTech industry has demonstrated that it can support the country in its development and recovery from COVID-19. The increasing trend in payments and adoption of digital technology was driven by the restrictions imposed to curb the spread of the virus. Companies have also adopted digital payments and fintech in order to reduce cost and improve efficiency. Google, Temasek and Bain (2021) reports that around 39 percent of companies credited digital platforms for their survival.

Aside from addressing the weaknesses of the sector, this paper recommends the following initiatives to support the growth of the FinTech industry:

**Philippine Skills Framework (PSF).** Financial technologies are fast growing and changing, which most of the academic institutions in the country somehow fail to catch up. The government should revisit its policies concerning higher education institutions and update the curriculum of related disciplines to better prepare the graduates and make them more competent, particularly those considering careers in FinTech. As the Philippines continues with efforts to grow and develop competitive and innovative enterprises, the need to reskill and upgrade the skills of human capital and workforce remains a crucial part. This is essential especially for the FinTech industry to increase and sustain their competitiveness under the FIRE (DTI 2021b).

Though there are numerous Filipino-led FinTech enterprises and a wide array of Filipino talents in the industry, there is still a need to mold the human resources and enterprises to keep up with international competitors who are thriving in the Philippines and the region as well as to be at par with other ASEAN countries. FIRE has made the need for reskilling and upskilling a greater imperative than ever before, as the world of work is being transformed coupled by the acceleration of the COVID-19 pandemic.

The PSF Initiative approach relies on the active collaboration among government, industry, and the academic and training community which employ an instrumental tool for the 3 key actors to communicate using the same language: the Skills Framework. PSF is an inter-agency effort to build the skills and competencies of the human capital and better prepare the country's workforce not only for the future economy but the present (DTI 2021b). This involves the development of sector-specific skills frameworks that will guide the country's workers in enhancing their skills for particular job roles. Therefore, the FinTech industry may benefit from this framework and may be included in the priority sector for PSF. This may help the talents and enterprises thrive more in this industry, in and out of the Philippines.

**The Next Administration and the Philippine Development Plan (PDP).** When the next administration crafts its own PDP in 2022, there is a need to highlight how to address the disparity of the use of FinTech among Filipinos and this is to address the weaknesses and threats presented in the SWOT Analysis. One of the cited weaknesses and threats involved hesitancy and lack of trust which could be tackled through education, information dissemination and improvements in ICT access. It was also highlighted that one of the opportunities to address the rampant divide in financial inclusion is through FinTech use and access. Therefore, there is a crucial need for the next administration to include empowering

Filipinos through the use of FinTech in all socioeconomic strata by providing an enabling environment and promotion.

Over the years, there have been shifts in priorities and outlook among people from different classes. For example, for class D and E where significant increases in bank account savings, insurance, and investments can be observed relative to the incidence of ownership in class ABC. Among age groups, adults aged 15-39 displayed higher interests in the use of smartphones and internet, which may indicate a more positive financial outlook among younger generations and a promising opportunity for the financial industry. This is also true across different locations in the country. There is a huge potential for people in Visayas and Mindanao, as well as those in rural areas, to be more active in owning accounts, particularly in MF NGOs and e-money accounts.

Appropriating more relevant and targeted financial programs and initiatives to these groups may provide some incentives for people to engage more in financial related activities, increasing the inclusivity of financial products and services.

It is also important that the lessons learned during the pandemic will be adopted to improve further the processes as the country braces the new normal. It is also important that issues on technology, data privacy and security, education, talent formation, and financial literacy will be addressed to ensure the sustainability and growth of FinTech.

Furthermore, as mentioned on the KIIs, the COVID-19 indeed accelerated the use of FinTechs not only for convenience but for safety. The trend of the respondents' answers is that the FinTech industry will not fizzle even if the pandemic and the health threats have been resolved. It was also mentioned the need to equip the regulators and people in the bureaucracy with advanced skills and reskilling to properly access and manage the environment. Therefore, the government needs to prioritize having futures thinking and growth mindset trainings to equip the contributors on the PDP to not only see what is presented now, but what will come after.

Lastly, skills should not be the only focus but also the availability of venture capital to support the growth of start-ups. There were several projects and initiatives to support start-ups, but the governments as regulators and providers of an enabling environment shall see how big the opportunities FinTechs may contribute to the development. Therefore, investments on the start-ups shall be prioritized and shall be included on the PDP.

In terms of incentivizing the industry, the government should also further empower the regulators for them to be able to provide the proper and accurate support, especially for the small participants. The government should be able to improve and provide a fair playing field to allow new entrants to participate and penetrate the market.

## Bibliography

- Association of the Luxembourg Fund Industry (ALFI) (2020). Tokenisation And Digital Custody In The World Of The Investment Fund A Collaborative Book. (Retrieved through [https://www.alfi.lu/getattachment/e03b04ca-4273-4241-ab3f-8b4b639f38f8/app\\_data-import-alfi-alfi-digital-fintech-collaborative-book-tokenisation-and-digital-custody.pdf](https://www.alfi.lu/getattachment/e03b04ca-4273-4241-ab3f-8b4b639f38f8/app_data-import-alfi-alfi-digital-fintech-collaborative-book-tokenisation-and-digital-custody.pdf) on October 7, 2021).
- Alliance for Financial Inclusion. 2016. Digital Financial Services Basic Terminology. Guideline Note No. 19, August 2016. (Retrieved through <https://www.afif-global.org/sites/default/files/publications/2016-08/Guideline%20Note-19%20DFS-Terminology.pdf> on October 7, 2021).
- Anisa, N. 2021. Fintech Peer-to-Peer Lending as Approach to Encourage Economic Inclusion for Rural Communities in Indonesia. In Fintech to Enable Development, Investment, Financial Inclusion, and Sustainability, Asian Development Bank (ADB), Conference Highlights, May 2021, pp 32-33. (Retrieved through <https://www.adb.org/publications/fintech-development-investment-financial-inclusion> on July 14, 2021).
- Bajracharya, S. 2009. Are Derivatives the Cause of a Financial Crisis? A Postgraduate Research Paper. (Retrieved through [https://www.researchgate.net/publication/284174149\\_Are\\_derivatives\\_the\\_cause\\_of\\_a\\_financial\\_crisis](https://www.researchgate.net/publication/284174149_Are_derivatives_the_cause_of_a_financial_crisis) on July 23, 2021).
- Bangko Sentral ng Pilipinas. 2017. Financial Inclusion in the Philippines. Issue No. 8, Series of 2018. (Retrieved from <https://www.bsp.gov.ph/Inclusive%20Finance/Financial%20Inclusion%20Reports%20and%20Publications/2017/2017FISToplineReport.pdf> on November 18, 2021).
- Bangko Sentral ng Pilipinas.. 2018. Financial Inclusion in the Philippines. Issue No. 8, Series of 2018. (Retrieved from [https://www.bsp.gov.ph/Media\\_And\\_Research/Financial%20Inclusion%20in%20the%20Philippines/FIP\\_1Sem2018.pdf](https://www.bsp.gov.ph/Media_And_Research/Financial%20Inclusion%20in%20the%20Philippines/FIP_1Sem2018.pdf) on November 18, 2021).
- Bangko Sentral ng Pilipinas. 2019. Financial Inclusion Survey 2019. (Retrieved from <https://www.bsp.gov.ph/Inclusive%20Finance/Financial%20Inclusion%20Reports%20and%20Publications/2019/2019FISToplineReport.pdf> on July 20, 2021).
- Bangko Sentral ng Pilipinas. 2020. Payments and Settlements - National Retail Payment System. (Accessed through <https://www.bsp.gov.ph/Pages/PAYMENTS%20AND%20SETTLEMENTS/National%20Retail%20Payment%20System/Empowering-Every-Juan-and-Maria.aspx> on October 14, 2021).
- Bangko Sentral n Pilipinas. 2021. BSP Circular No. 1108, Series of 2021 - Guidelines for Virtual Asset Service Providers (VASP). (Accessed through <https://www.bsp.gov.ph/Regulations/Issuances/2021/1108.pdf> on December 14, 2021)

- Beatrice, A. 2020. Digital Lending: Revolutionizing the Loan process using technology. Analytics Insight. <https://www.analyticsinsight.net/digital-lending-revolutionizing-the-loan-process-using-technology/> (Accessed Nov. 15, 2021)
- Beatty, A. 2021. Digital Lending and the New Financial Ecosystem. <https://www.finextra.com/blogposting/20072/digital-lending-and-the-new-financial-ecosystem> (Accessed on November 15, 2021)
- Beck, T. 2020. Fintech and Financial Inclusion: Opportunities and Pitfalls. Asian Development Bank Institute (ADBI) Working Paper Series No. 1165, July 2020. (Retrieved through <https://www.adb.org/sites/default/files/publication/623276/adbi-wp1165.pdf> on July 20, 2021).
- Bunyi, D., J.C. Ipac, E.R.J. Aguilar, and S.C.S. Esquivel. 2021. Philippines: Fintech Laws and Regulations 2021. (Accessed through <https://iclg.com/practice-areas/fintech-laws-and-regulations/philippines> on September 1, 2021).
- Cambridge Centre for Alternative Finance, World Bank and World Economic Forum. 2020. The Global Covid-19 FinTech Market Rapid Assessment Report, University of Cambridge, World Bank Group and the World Economic Forum (Retrieved from <https://www.jbs.cam.ac.uk/wp-content/uploads/2021/03/2020-ccaf-global-covid-fintech-market-rapid-assessment-study-v2.pdf> on October 26, 2021).
- Center for Capital Markets Competitiveness (2021). Digital Assets: A Framework For Regulation To Maintain The United States' Status As An Innovation Leader. (Retrieved through <https://www.centerforcapitalmarkets.com/resource/digital-assets-a-framework-for-regulation-to-maintain-the-united-states-status-as-an-innovation-leader/> on October 14, 2021).
- Commission on Higher Education (CHED) (2019 and 2020). Higher Education Enrollment by Discipline Group: AY 2018-19. (Retrieved through <https://ched.gov.ph/higher-education-enrollment-by-discipline-group-ay-2018-19/> on July 23, 2021).
- Chen, D., A. S. Kavuri, and A. Milne. 2020. The Future of Peer-to-Peer Lending in China. Loughborough University. (Retrieved through [https://repository.lboro.ac.uk/articles/journal\\_contribution/The\\_future\\_of\\_peer-to-peer\\_lending\\_in\\_China/13092878](https://repository.lboro.ac.uk/articles/journal_contribution/The_future_of_peer-to-peer_lending_in_China/13092878) on July 23, 2021).
- Cornelli, G, S Doerr, L Franco and J Frost (2021): "Funding for fintechs: patterns and drivers", BIS Quarterly Review, pp 31–43, September. PitchBook Data Inc is the source of the data on fintech funding.
- Deloitte Consulting LLP. 2021. Banking as a Service: Explained: What it is, Why it's Important and How to Play. (Retrieved through <https://www.deloittedigital.com/content/dam/deloittedigital/us/documents/blog/offering-20210727-blog-baas.pdf> on October 14, 2021).
- Denyes, L. 2019. Basic Business Models for Banks Providing Digital Financial Services in Africa. International Finance Corporation World Bank Group, Note 68, June 2019. (Retrieved through <https://www.ifc.org/wps/wcm/connect/7db6ab09-c30c-4315-bfe5->

f761f2a14159/EMCompass-Note-68-Business-Models-for-Banks-DFS-Africa.pdf?MOD=AJPERES&CVID=mIutwXh on October 8, 2021).

- Donner, J. (2017). Learning Advances in Digital Finance 2017. Partnership for Finance in a Digital Africa. (Retrieved through <https://www.financedigitalafrica.org/2017/11/07/learning-advances-in-digital-finance-2017/> on October 8, 2021).
- DTI (2021a). Artificial Intelligence. Department of Trade and Industry Philippines. (<http://innovate.dti.gov.ph/resources/roadmaps/artificial-intelligence/> on 13 December 2021).
- DTI (2021b). Keynote Remarks of Secretary Ramon M. Lopez, Launch of the Philippine Skills Framework Initiative. Department of Trade and Industry Philippines. (<https://www.dti.gov.ph/speeches/launch-of-the-philippine-skills-framework-initiative/> on 13 December 2021).
- Ernst & Young LLP. 2016. UK FinTech: On the Cutting Edge. EYG no. CQ0341. (Retrieved through [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/502995/UK\\_FinTech\\_-\\_On\\_the\\_cutting\\_edge\\_-\\_Full\\_Report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/502995/UK_FinTech_-_On_the_cutting_edge_-_Full_Report.pdf) on October 26, 2021).
- Ernst & Young LLP (2018). ASEAN Fintech Census. (Retrieved through [https://assets.ey.com/content/dam/ey-sites/ey-com/en\\_sg/topics/financial-services/ey-asean-fintech-census-2018.pdf](https://assets.ey.com/content/dam/ey-sites/ey-com/en_sg/topics/financial-services/ey-asean-fintech-census-2018.pdf) on October 26, 2021).
- Financial Stability Board. 2017. Fintech Stability Implications from Fintech: Supervisory and Regulatory Issues that Merit Authorities' Attention (Retrieved through <https://www.fsb.org/wp-content/uploads/R270617.pdf> on November 25, 2021).
- Findexable. 2019. The Global Fintech Index 2020. (Accessed through [https://findexable.com/wp-content/uploads/2019/12/Findexable\\_Global-Fintech-Rankings-2020exSFA.pdf](https://findexable.com/wp-content/uploads/2019/12/Findexable_Global-Fintech-Rankings-2020exSFA.pdf) on December 2, 2021).
- Findexable. 2021. Global Fintech Rankings Report: Bridging the Gap 2021. (Accessed through [https://findexable.com/wp-content/uploads/2021/06/Global-Fintech-Rankings-2021-v1.2\\_30\\_June.pdf](https://findexable.com/wp-content/uploads/2021/06/Global-Fintech-Rankings-2021-v1.2_30_June.pdf) on December 14, 2021).
- Fintech Alliance Philippines (2019). Uncharted Beyond: The Taxonomy of Fintech in the Philippines. (Retrieved through <https://api.fintechalliance.ph/document> on November 25, 2021).
- Fintech Alliance Philippines (2020). The Philippine Fintech Report 2020. (Retrieved through <https://fintechnews.ph/41725/fintech/fintech-report-philippines-2020/> on November 25, 2021).
- Fintech Singapore. 2017. Fintech Philippines Startup Report 2017. (Retrieved through <https://fintechnews.sg/12240/fintechphilippines/fintech-philippines-startup-report-and-infographic-2017/> on December 14, 2021).

- Google, TEMASEK, and Bain (2021). E-Conomy SEA 2021. Roaring 20s: The SEA Digital Decade. (Retrieved through [https://www.thinkwithgoogle.com/intl/en-apac/consumer-insights/consumer-trends/e-conomy-sea-2021/?utm\\_source=twg\\_paid\\_gsn&utm\\_medium=paidsearch&utm\\_campaign=twg\\_paid\\_gsn&utm\\_medium=cpc&utm\\_source=Google&utm\\_team=twg-apac&utm\\_campaign=202011-seaeconomygenericem-ph-en&gclid=Cj0KCQiAweaNBhDEARIsAJ5hwbeCwuSNfbY7USu4spSxah3G5JJL73FKGqRaunb-Yn-E\\_snuybosLhgaAuDkEALw\\_wcB&gclsrc=aw.ds](https://www.thinkwithgoogle.com/intl/en-apac/consumer-insights/consumer-trends/e-conomy-sea-2021/?utm_source=twg_paid_gsn&utm_medium=paidsearch&utm_campaign=twg_paid_gsn&utm_medium=cpc&utm_source=Google&utm_team=twg-apac&utm_campaign=202011-seaeconomygenericem-ph-en&gclid=Cj0KCQiAweaNBhDEARIsAJ5hwbeCwuSNfbY7USu4spSxah3G5JJL73FKGqRaunb-Yn-E_snuybosLhgaAuDkEALw_wcB&gclsrc=aw.ds) on October 12, 2021)
- Hamida, N., R. Prihatni, and I. Ulupui. 2020. The Effect of Financial Literacy, Fintech (Financial Technology) and Intellectual Capital on the Performance of MSMEs in Depok City, West Java. *Journal of Social Science*, Vol. 1, No. 4, 2020. (Retrieved through <https://www.jsss.co.id/index.php/jsss/article/view/53/45> on July 11, 2021).
- Hua, X. and Y. Huang. 2020. Understanding China's Fintech Sector: Development, Impacts and Risks. (Retrieved through <https://core.ac.uk/download/pdf/334410228.pdf> on July 11, 2021).
- Huang, Y. 2020. Fintech Development in the People's Republic of China and its Macroeconomic Implications. Asian Development Bank Institute (ADBI) Working Paper Series No. 1169, August 2020. (Retrieved through <https://www.adb.org/sites/default/files/publication/629396/adbi-wp1169.pdf> on July 11, 2021).
- Institute Management Development. 2021. IMD World Digital Competitiveness Ranking 2021. (Accessed through <https://www.imd.org/centers/world-competitiveness-center/rankings/world-digital-competitiveness/> on December 1, 2021)
- Jahan, S., J. De, F. Jamaludin, P. Sodsriwiboon, and C. Sullivan. 2019. The Financial Inclusion Landscape in the Asia-Pacific Region: A Dozen Key Findings. International Monetary Fund (IMF) Working Paper No. 19/79, April 19, 2019. (Retrieved through <https://www.imf.org/en/Publications/WP/Issues/2019/04/19/The-Financial-Inclusion-Landscape-in-the-Asia-Pacific-Region-A-Dozen-Key-Findings-46713> on July 22, 2021).
- Javier, Lyn I. 2019. BSP's Thrust on Digital Financial Innovation A Regulatory Perspective. Powerpoint presentation, Bangko Sentral ng Pilipinas, Metro Manila, Philippines
- John Wiley & Sons, Inc. (2021). Digital Skills Gap Index (DSGI). (Accessed through [https://dsgi.wiley.com/?utm\\_source=google&utm\\_medium=paid\\_search&utm\\_campaign=MP\\_FY22Q2\\_PSM\\_DSGI\\_Paid\\_Search\\_OTH-GOV\\_DSGI\\_Index\\_Global\\_Launch\\_Campaign\\_Asia/Oceania\\_OTH324RM5&utm\\_id=14568899906&gclid=Cj0KCQiAweaNBhDEARIsAJ5hwbesyXwJEVhn9ElbmFCw4r2jLSlLs4niZoq8c1vCj6PKJUZ\\_VG\\_QbR0aAp\\_pEALw\\_wcB](https://dsgi.wiley.com/?utm_source=google&utm_medium=paid_search&utm_campaign=MP_FY22Q2_PSM_DSGI_Paid_Search_OTH-GOV_DSGI_Index_Global_Launch_Campaign_Asia/Oceania_OTH324RM5&utm_id=14568899906&gclid=Cj0KCQiAweaNBhDEARIsAJ5hwbesyXwJEVhn9ElbmFCw4r2jLSlLs4niZoq8c1vCj6PKJUZ_VG_QbR0aAp_pEALw_wcB) on December 1, 2021)
- Lee, I. and Y. J. Shin. 2017. Fintech: Ecosystem, Business Models, Investment Decisions, and Challenges. Kelley School of Business, Indiana University. Published by Elsevier Inc. *Business Horizons* (2018) 61, 35-46.



- Lestari, D., D. C. Darma, and M. Muliadi. 2020. FinTech and Micro, Small and Medium Enterprises Development: Special Reference to Indonesia. *Entrepreneurship Review* 1(1), 2020. Research & Innovation Initiative, 3112 Jarvis Ave, Warren, MI 48091, USA. (Retrieved through [https://www.researchgate.net/profile/Dio-Caisar-Darma/publication/341384240\\_FinTech\\_and\\_Micro\\_Small\\_and\\_Medium\\_Enterprises\\_Development\\_Special\\_Reference\\_to\\_Indonesia/links/5ebd7b34a6fdcc90d67540b6/FinTech-and-Micro-Small-and-Medium-Enterprises-Development-Special-Reference-to-Indonesia.pdf](https://www.researchgate.net/profile/Dio-Caisar-Darma/publication/341384240_FinTech_and_Micro_Small_and_Medium_Enterprises_Development_Special_Reference_to_Indonesia/links/5ebd7b34a6fdcc90d67540b6/FinTech-and-Micro-Small-and-Medium-Enterprises-Development-Special-Reference-to-Indonesia.pdf) on July 11, 2021).
- Low, C.S. and M. F. Wong. 2021. The Effect of FinTech on the Financial Institution in Six ASEAN Countries: Fama-French Five-Factor Asset Pricing Model Approach. *Proceedings of the Ninth International Conference on Entrepreneurship and Business Management (ICEBM 2020)*. *Advances in Economics, Business and Management Research*, Volume 174, pp. 224-232. (Retrieved through [https://www.researchgate.net/publication/351652415\\_The\\_Effect\\_of\\_FinTech\\_on\\_the\\_Financial\\_Institution\\_in\\_Six\\_ASEAN\\_Countries\\_Fama-French\\_Five-Factor\\_Asset\\_Pricing\\_Model\\_Approach](https://www.researchgate.net/publication/351652415_The_Effect_of_FinTech_on_the_Financial_Institution_in_Six_ASEAN_Countries_Fama-French_Five-Factor_Asset_Pricing_Model_Approach) on July 20, 2021).
- Lüftenegger, E., S. Angelov, E. van der Linden, and P. Grefen. 2010. The State of the Art of Innovation-Driven Business Models in the Financial Services Industry. (Retrieved through [https://www.researchgate.net/publication/254870665\\_The\\_state\\_of\\_the\\_art\\_of\\_innovation-driven\\_business\\_models\\_in\\_the\\_financial\\_services\\_industry](https://www.researchgate.net/publication/254870665_The_state_of_the_art_of_innovation-driven_business_models_in_the_financial_services_industry) on October 14, 2021).
- Masally, K. N., R. M. Ricart, M. Bambawale, S. Totapally, and V. Bhandari. 2019. The State of Digital Payments in the Philippines. *Country Diagnostic*, December 2019. (Retrieved through [https://responsiblefinanceforum.org/wp-content/uploads/2020/02/The\\_State\\_of\\_Digital\\_Payments\\_in\\_the\\_Philippines-Feb20.pdf](https://responsiblefinanceforum.org/wp-content/uploads/2020/02/The_State_of_Digital_Payments_in_the_Philippines-Feb20.pdf) on July 11, 2021).
- Mckenzie (n.d.). Guide to Insurtech Innovation and Utilization. (<https://resourcehub.bakermckenzie.com/en/resources/asia-pacific-insurance/asia-pacific/japan/topics/guide-to-insurtech-innovation-and-utilization> on July 20, 2021)
- Morgan, P. J. and Long T. Q. 2020. Fintech and Financial Literacy in Viet Nam. *Asian Development Bank Institute (ADB) Working Paper Series No. 1154*, June 2020. (Retrieved through <https://www.adb.org/sites/default/files/publication/616781/adb-wp1154.pdf> on July 20, 2021).
- Moufakkir, M. and Q. Mohammed. 2020. The Nexus Between FinTech Adoption and Financial. In *Impact of Financial Technology (FinTech) on Islamic Finance and Financial Stability*, N. Naifer, 2020, pp. 193-209. (Retrieved from [https://www.researchgate.net/publication/338304842\\_The\\_Nexus\\_Between\\_FinTech\\_Adoption\\_and\\_Financial\\_Inclusion](https://www.researchgate.net/publication/338304842_The_Nexus_Between_FinTech_Adoption_and_Financial_Inclusion) on July 20, 2021).
- Noble, L.W.T. 2021. Enabling Regulations, Pandemic Pushed Fintech Sector's Expansion. (Accessed through <https://www.bworldonline.com/enabling-regulations-pandemic-pushed-fintech-sectors-expansion/> on September 1, 2021).
- Numbeo (2021). Prices by Country of Internet (60 Mbps or More, Unlimited Data, Cable/ADSL) (Utilities (Monthly)). (Retrieved through

- [https://www.numbeo.com/cost-of-living/prices\\_by\\_country.jsp?itemId=33](https://www.numbeo.com/cost-of-living/prices_by_country.jsp?itemId=33) on October 26, 2021).
- PSA (various years). Labor Force Survey. (Accessed through <https://psa.gov.ph/statistics/survey/labor-force/lfs-index> on September 1, 2021).
- PWC (2021). 3rd Annual Global Crypto Hedge Fund Report 2021. (Accessed through [https://www.pwc.com/gx/en/financial-services/pdf/3rd-annual-pwc-elwood-aima-crypto-hedge-fund-report-\(may-2021\).pdf](https://www.pwc.com/gx/en/financial-services/pdf/3rd-annual-pwc-elwood-aima-crypto-hedge-fund-report-(may-2021).pdf) on September 1, 2021).
- Rajan, D. 2017. Why Banks Should Reinvent Banking in the Era of Platform Economy? The Digital Transformation People, September 21, 2017. (Retrieved from <https://www.thedigitaltransformationpeople.com/channels/strategy-and-innovation/why-banks-should-reinvent-banking-in-the-era-of-platform-economy/> on October 10, 2021).
- Schellhase, J. and Garcia, A. (2019). FinTech in the Philippines: Assessing the State of Play. (Retrieved from [https://milkeninstitute.org/sites/default/files/reports-pdf/FinTech-in-the-Philippines-Update%20%281%29\\_0.pdf](https://milkeninstitute.org/sites/default/files/reports-pdf/FinTech-in-the-Philippines-Update%20%281%29_0.pdf) on October 10, 2021).
- Serfiyani, C. (2019). Characteristics of Digital Savings Account as the Latest Innovation in Digital Banking Services. International Conference on Science, Technology & Environment (ICoSTE) 2019. (Retrieved through [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3487002](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3487002) on October 26, 2021).
- Sipko, J. 2011. Derivatives and the Real Economy. Creative and Knowledge Society, Vol. 1, No. 1, pp. 33-43. (Access through <https://sciendo.com/abstract/journals/cks/1/1/article-p33.xml> on July 23, 2021).
- Soriano, et. Al. (2019). The Asean Fintech Ecosystem Benchmarking Study. ADBI CCAF and FinTechSpace. (Access through <https://www.jbs.cam.ac.uk/wp-content/uploads/2020/08/2019-ccaf-asean-fintech-ecosystem-benchmarking-study.pdf> on July 23, 2021).
- Speedtest (2021). Speedtest Global Index. (Retrieved through <https://www.speedtest.net/global-index> on October 26, 2021).
- Susantono, B. 2021. FinTech can Drive a Strong Post-COVID-19 Recovery in Asia. Asian Development Blog, January 18, 2021. (Retrieved through <https://blogs.adb.org/blog/fintech-can-drive-strong-post-covid-19-recovery-asia> on October 26, 2021).
- Tok, Y. W. and T. Chansriniyom. 2021. Does Innovation in Lending Help SMEs? In Fintech to Enable Development, Investment, Financial Inclusion, and Sustainability, Asian Development Bank (ADB), Conference Highlights, May 2021, pp. 20-22. (Retrieved through <https://www.adb.org/publications/fintech-development-investment-financial-inclusion> on July 14, 2021).

- U.S. Securities and Exchange Commission (SEC) 2019. Framework for “Investment Contract” Analysis of Digital Assets, (Retrieved through <https://www.sec.gov/files/dlt-framework.pdf>. On November 30, 2021)
- Yesseleva-Plonka, M. 2021. Blockchain Network System for Assessing SMEs’ Creditworthiness. In Fintech to Enable Development, Investment, Financial Inclusion, and Sustainability, Asian Development Bank (ADB), Conference Highlights, May 2021, pp. 22-24. (Retrieved through <https://www.adb.org/publications/fintech-development-investment-financial-inclusion> on July 14, 2021).
- Welsch, G., F. Thiesse, A. Dürr. 2020. A Consolidated Business Model Canvas of Blockchain-Based FinTech Startups: Evidence from Initial Coin Offerings. (Retrieved from [https://www.researchgate.net/publication/338209637\\_A\\_Consolidated\\_Business\\_Model\\_Canvas\\_of\\_Blockchain-Based\\_FinTech\\_Startups\\_Evidence\\_from\\_Initial\\_Coin\\_Offerings](https://www.researchgate.net/publication/338209637_A_Consolidated_Business_Model_Canvas_of_Blockchain-Based_FinTech_Startups_Evidence_from_Initial_Coin_Offerings) on October 10, 2021).
- World Bank (2017). The Global Findex Database 2017. ( Retrieved through <https://globalfindex.worldbank.org/> on July 20, 2021).
- World Economic Forum. 2019. The Global Competitiveness Report 2019. (Accessed through [https://www3.weforum.org/docs/WEF\\_TheGlobalCompetitivenessReport2019.pdf](https://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf) on December 2, 2021)
- Yoshino, N., P. J. Morgan, and T. Q. Long. 2020. Financial Literacy and Fintech Adoption in Japan. Asian Development Bank Institute (ADBI) Working Paper Series No. 1095, March 2020. (Retrieved through <https://www.adb.org/sites/default/files/publication/574806/adbi-wp1095.pdf> on July 20, 2021).

## Annexes

### *Annex 1: Laws regulating and supporting the operations of FinTech*

Laws	Definition	Responsible Agencies
Philippine Innovation Act RA No. 11293	Promotes the diffusion of knowledge and information for national development; to generate and scale up action in all levels and areas of education, training, research and development towards promoting innovation and internationalization activities of MSMEs as driver of sustainable and inclusive growth; provides technical and/or financial support programs for entrepreneurs	NIC
Innovation Startup Act RA No. 11337	An act providing benefits and programs to strengthen, promote and develop the Philippine Startup Ecosystem; streamlines government and non-government initiatives to foster inclusive growth through an innovative economy	DOST, DICT, DTI
Bayanihan to Recover as One Act RA No. 11494	Provides low-interest credit to MSMEs, payable within 3 years without the need of collateral if not exceeding 3M	DTI – SBCorp
Corporate Recovery and Tax Incentives for Enterprises Act (CREATE) RA No. 11534	Contains amendments to several provisions of the National Internal Revenue Code of 1997 (“Tax Code”), primarily on the reduction of the corporate income tax rate and the introduction of a new title on tax incentives; previously known as the Corporate Income Tax and Incentives Reform Act (CITIRA) bill; subject to the conditions, critical domestic enterprises shall be entitle to a special corporate income tax of 5% of gross income earned in lieu of all national and local taxes	DOF
Anti-Money Laundering Act RA No. 11521	Amended the RA No. 9160 (Anti-Money Laundering Act (AMLA)) to make it more responsive to emerging issues; AMLA investigates money laundering and other financial crimes to protect financial institutions and deter criminals from making the Philippines a money laundering site for criminal proceeds	AMLC
Cybercrime Prevention Act of 2012 RA No. 10175	An act defining cybercrime; safeguards the integrity of computer and communications systems, networks and databases, and the confidentiality, integrity, and availability of data stored therein	NBI, PNP
Data Privacy Act of 2012 RA No. 10173	Regulates the collection, use, and transmission of personal data	NPC
Lending Company Regulation Act RA No. 9474	Governs the establishment, operation and regulation of lending companies	SEC
Electronic Commerce Act of 2000 RA No. 8792	Facilitates domestic and international transactions, contracts and exchanges and storage of information through the utilization of electronic, optical and similar medium, mode, instrumentality and technology to recognize the authenticity and reliability of electronic documents related to such activities and to promote the	DTI

	universal use of electronic transaction in the government and general public	
Financing Company Act of 1998 RA No. 8556	Regulates and promotes the operation of financing and leasing companies	SEC
Revised Intellectual Property Code RA No. 8293	Created the IPOPHL; provides laws on patents, trademarks, service marks and trade names, and copyright	DTI-IPOPHL
BSP Cir. No. 1108, s. 2021	Regulates the operations of Virtual Asset Service Providers (VASPs); amends the BSP Cir. No. 944, s. 2017, which, redefining Virtual Currency Exchanges as VASPs, and virtual currencies (VCs) as virtual assets (Vas); defines VASP as any entity that offers services or engages in activities that provide facility for the transfer or exchange of Vas. Regulated activities now include exchange between one or more forms of Vas, transfer of Vas, and safekeeping and/or administration of Vas or instruments enabling control over Vas. Prior to the amendment, VC exchange refers only to the conversion or exchange of fiat currency or other value into VC, or the conversion or exchange of VC into fiat currency or other value; directly regulates cryptocurrencies/crypto assets	BSP
BSP Cir. No. 1033, s. 2019	Requires electronic money issuers (EMIs) to secure electronic payment and financial services licenses	BSP
BSP Cir. No. 1105, s. 2020	Defines the guidelines for the establishment of digital banks; approves the inclusion of “digital banks” as a distinct classification of banks	BSP
SEC MC No. 14, s. 2019	The Rules and Regulations Governing Crowdfunding	SEC
IC Cir. Letter No. 2014-47	Guidelines on Electronic Commerce of Insurance Products	
IC Cir. Letter No. 2016-15	Amendments to Guidelines on Electronic Commerce of Insurance Products, pertaining to variable life insurance products	IC
IC Cir. Letter No. 2016-60	Amendments to Guidelines on Electronic Commerce of Insurance Products, pertaining to electronic mode of validating information and electronically or digitally capturing consent for the processing of application	IC
IC Cir. Letter No. 2018-07	Amendment to Item 7.18 of Insurance Commission Circular Letter No. 2014-47 on the Use of Mobile Application for Distribution of Insurance Products	IC
IC Cir. Letter No. 2020-70	Recognizes the digital payments as an integral part of insurance technology (insurtech), and provides frameworks and encourages the adoption of insurance transactions	IC
IC Cir. Letter No. 2021-11	Provides guidelines on the adoption of a regulatory sandbox framework for financial technology (FinTech)	IC

	innovations for health maintenance organizations (HMOs) and pre-need companies	
IC Cir. Letter No. 2020-73	Provide guidelines on the adoption of a regulatory sandbox framework for insurance technology (insurtech) innovations	IC
IC Cir. Letter No. 2021-09	Provides guidelines on electronic commerce of pre-need companies	IC
IC Cir. Letter No. 2021-10	Provides guidelines on electronic commerce of HMO products	IC
IC Cir. Letter No. 2021-11	Provides guidelines on the adoption of a regulatory sandbox framework for FinTech innovations for HMOs and pre-need companies	IC

---

BSP – Bangko Sentral ng Pilipinas, DTI – Department of Trade and Industry, DOST – Department of Science and Technology, DOF – Department of Finance, SEC – Securities and Exchange Commission, IC – Insurance Commission, DICT – Department of Information and Communications Technology, IPOPHL – Intellectual Property Office of the Philippines, NBI – National Bureau of Investigation, NIC – National Innovation Council, NPC – National Privacy Commission, NTC – National Communications Commission, PNP – Philippine National Police, SBCorp – Small Business Corporation

Source: Authors' compilation