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Advancing Free Trade for Asia-Pacific Prosperity

Public Policy, Fintech and SMEs: Recommendations for Promoting a New Financing Ecosystem

APEC Small and Medium Enterprises Working Group

August 2022

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ABBREVIATIONS

ACL	Australian Credit License
ACOPI	Colombian Association for Micro, Small and Medium Enterprises
ACRA	Corporate Regulatory Authority
AFS	Australian financial services
AI	Artificial Intelligence
AML	Anti-Money Laundering
APEC	Asia-Pacific Economic Cooperation
API	Application Programming Interface
APRA	Australian Prudential Regulation Authority
ASEAN	Association of Southeast Asian Nations
ASFL	Australian financial services license
ASIC	Australian Securities and Investment Commission’s
AUD	Australian Dollars
BI	Bank of Indonesia
BOT	The Bank of Thailand
BSP	Bangko Sentral ng Pilipinas
CCCS	Competition and Consumer Regulatory Authority of Singapore
CDI	Commercial Data Interchange
CDR	Consumer Data Right
CFPB	Consumer Financial Protection Bureau
CMA	Capital Markets Authority
CMF	The Financial Market Commission
CMU	Chiang Mai University
CORFO	Corporación de Fomento de la Producción
CR	Hong Kong, China Companies Registry

CSEF	Crowd-Sourced Equity Funding
CTE	Espacio Controlado de Prueba
depa	Digital Economy Promotion Agency
DLT	Distributed Ledger Technology
DTI	Debt-to-Income Ratio
e-KYC	Electronic Know-Your-Customer
ECF	Equity crowdfunding
EFM	Enterprise Financial Management
FinTech	Financial Technologies
GDP	Growth Domestic Product
HKMA	Hong Kong, China Monetary Authority
IA	Insurance Authority
IC	Insurance Commission
ICT	Information and Communications Technology
IFC	Collective Financing Institutions
IFPE	Electronic Payment Fund Institutions
IRA	Insurance Regulatory Authority
KII	Key Informant Interview
MAS	Monetary Authority of Singapore
MCO	Movement Control Order
MDEC	Malaysia Digital Economy Corporation
MSME	Micro, Small and Medium Enterprise
OCC	Office of the Comptroller of Currency
OECD	Organization for Economic Co-operation and Development
OJK	Financial Services Authority
P2P Lending	Peer-to-Peer Lending

POS	Point of Sale
PSE	Secure Online Payment
SC	Securities Commission Malaysia
SEC	The Securities and Exchange Commission
SFC	Superintendencia Financiera de Colombia
SFC	Securities and Futures Commission
SLIK	Financial Information Services System
SME	Small – Medium Enterprise
UAF	The Financial Analysis Unit
UNSGSA	United Nations Secretary-General's Special Advocate for Inclusive Finance for Development
USD	United States dollars
WEF	World Economic Forum

1 EXECUTIVE SUMMARY

> **What is a Fintech?**
>
> Fintech, or financial technology, is the term used to describe any technology that delivers financial services through software, such as online banking, mobile payment apps or even cryptocurrency. Fintech is a broad category that encompasses many different technologies, but the primary objectives are to change the way consumers and businesses access their finances and compete with traditional financial services.

The FinTech sector has been growing rapidly in many APEC Economies. For instance, in Chile, from 2016 to 2021, the number of FinTech enterprises grew by almost 220%. Digital financial services have especially grown in popularity as an area of focus for financial interventions over the last few years and exacerbated by the COVID-19 pandemic. FinTech penetration is highest in payment transaction technology, followed by money transfer, remittances, and lending. SMEs have been gradually adopting FinTech offerings, but there is still significant room for improvement. However, FinTech companies have, for the most part, been able to reduce transaction costs for SMEs.

The objective of this APEC policy paper is to provide a state of play on the financial policy and programs enabling FinTech development and mapping them to the 14 economies (12 APEC members and 2 non-APEC members). The project aligns with the three key pillars of the APEC Action Agenda on Advancing Economic, Financial, and Social Inclusion: i) Economic Inclusion: focuses on capacity building to mitigate challenges of public policy facing FinTech industries, and how financial technologies can support SMEs and entrepreneurs; ii) Financial Inclusion: mapping of best practices of financial inclusion through FinTech, creating awareness and broader access to FinTech services, and iii) Social Inclusion: deliver recommendations to develop a new financial ecosystem composed of public agencies, FinTech companies, SMEs and women-led SMEs. To carry out the study, A2F Consulting conducted an extensive desk review of the FinTech landscape, business and regulatory environment, and the FinTech SME policy ecosystem for the selected APEC economies. In addition, key informant interviews with about 80 stakeholders were carried out. The stakeholders included government officials, institutional stakeholders, business associations, traditional financial institutions, mobile network operators, and FinTech companies.

FinTech is multisector and falls under the jurisdiction of various regulators and laws. FinTech covers many different sectors, from retail banking, commercial banking, investment management, insurance, and more. Economies have been issuing different sets of regulations to cover the wide array of activities and innovations falling under the definition of FinTech. For instance, there are numerous laws that regulate the various activities of FinTech firms in Singapore. Financial regulation in Singapore is function-based, not firm-based. As such, FinTech firms will fall under the jurisdiction of various existing laws based on the services they provide. In another example, Mexico has recently enacted the FinTech Law of 2018 to regulate the previously unchecked growth of digital banking, contactless digital payments, and real-time payments. The FinTech Law regulates Financial Technology Institutions (ITFs) to offer greater legal certainty to users of financial services through digital platforms. In addition, to facilitate coordination on regulatory aspects, some economies have opted to establish a single point of contact for all matters related to FinTech regulation. This reduces the communication barrier between the private sector and the regulator and makes the process of engagement with the private sector simpler and more efficient. Examples include the Ministry of Finance in Mexico and the Digital Economy Promotion Agency (depa), Thailand.

Similarly, regulatory sandboxes have been used to test innovative products, albeit with mixed results. Sandboxes are a 'safe space' in which businesses can test innovative products, services, business models, and delivery mechanisms without immediately incurring all the normal regulatory consequences of engaging in the activity in question. This enables the FinTech companies to pilot a product or business model and manage their regulatory risk during the testing period. For instance, the regulatory sandbox set up by Bank Negara Malaysia has been credited for much of the success of the recent growth in the Malaysian FinTech sector. One of the graduates of this sandbox, MoneyMatch has recently raised almost USD 4.4 million in series A funding. However, some stakeholders have divided opinions about regulatory sandboxes' effectiveness. For instance, some stakeholders argue that the sandboxes make the regulators the gatekeepers of FinTech innovation, which may slow down or even halt the innovation process. While others have pointed out that there have been very few success stories coming out of these sandboxes.

The research shows that women generally trail men in the use of FinTech and financial inclusion, especially in developing economies. For example, in Malaysia, women were over 10 percent less likely to have made or received a digital payment within the last year. The case was similar in economies like Indonesia or Kenya. The analysis indicates that FinTech participation among women could be lower due to a lack of enthusiasm among women for new FinTech products, online security concerns, and lack of access to technology. The situation may have been exacerbated due to FinTech lacking a gendered focus. For instance, one stakeholder in the FinTech industry stated that they are focused on developing products and services to cater to the general consumers or SMEs, rather than developing products particularly tailored for women and women-owned SMEs. This problem could be partially stoked due to the lack of female entrepreneurs and the female workforce in the FinTech industry. There are less than 30 percent of women in FinTech, and less than 5 percent of them are CEOs. Therefore, decision-making women are largely underrepresented in the FinTech industry. However, it should be noted that the trend appeared to be different in developed economies like Australia or Canada, where both men and women were highly involved in the financial services and FinTech sectors.

However, the report also identified several promising developments that are helping address such gender disparity in the FinTech sector. For instance, universal digital identification schemes have helped reduce frictions in women's access to finance. Women have particularly benefitted from advances in credit scoring methods using AI & ML. These credit scoring methods are particularly useful in economies where there is a dearth of financial data, and these scores are objective and do not have gendered biases like traditional credit scoring models. In addition, FinTech innovation facilitators are playing an important role in promoting women-led or women-focused FinTech firms. For instance, FinTech startups like Musoni Microfinance in Kenya primarily provides loans to women smallholder farmers, while Manulife's Eve in The Philippines targeted the women's health insurance section. The paper also found that digital finance has made women vulnerable to new security related threats, which must be addressed. In addition, economy-level policies also play a vital role in encouraging female entrepreneurship by addressing issues related to women's economic empowerment like tackling adverse norms and promoting positive role models, ensuring legal protection and reforming discriminatory laws, and so on.

The analysis suggests that APEC policy makers could target several policy enablers that may assist in establishing a landscape that would help the FinTech sector expand in an inclusive manner. Digital identification of the customer base is key for FinTech development. Economies that lack universal digital identity solutions, such as digital ID cards, appeared not to be suitable to foster the FinTech sector. In addition, open banking has immense potential to foster competition and innovation in the FinTech industry by reducing barriers to entry and helping introduce tailored products for SMEs. For these reasons, open banking was favored by most policy makers. The paper also identified that to have a healthy FinTech environment the economies must have top data privacy, protection against financial fraud, along with ensuring cyber-security. Platforms promoting dialogue between FinTech regulators and FinTech companies have also facilitated innovation and regulation in the sector. These include the creation of innovation facilitators, such as FinTech hubs, SME digitalization programs, and entrepreneurship networking platforms.

Several technology enablers were also identified as impactful in terms of improving access to financial services for SMEs. Technologies like API and biometrics have supported the implementation of programs and policies to support FinTech development. Similarly, artificial intelligence / machine learning (AI & ML) and digital ledger technology (DLT) have enabled the expansion of alternative credit scoring methods and further refined data analysis capabilities. In addition, technology enablers like digital authentication systems, blockchain, and cryptoassets have helped push the frontier in terms of secure access to FinTech services. For instance, iAM Smart provided all Hong Kong, China residents with a single digital identity and authentication to conduct transactions online, simplifying the process to get financial services. In another example, the Canadian firm Bitfury provided a premier blockchain as a service solution, which helped the Canadian government and businesses integrate blockchain systems into their operations to increase time and cost efficiency.

2 INTRODUCTION

The APEC project aims to explore how policy makers, in particular public development agencies, can foster wider uptake of FinTech solutions. Data suggests that the FinTech industry is growing at rapid rates, registering a global investment level that grew from approximately USD 1.1 billion in 2010 to USD 31 billion in 2017.[1] This project aims to deliver recommendations for policy makers in APEC economies on how to increase awareness and foster the adoption of FinTech solutions for SMEs.[2] The project aligns with the three key pillars of the APEC Action Agenda on Advancing Economic, Financial and Social Inclusion: i) Economic Inclusion: Focus on capacity building to mitigate challenges of public policy facing FinTech industries, and how financial technologies can support SMEs and entrepreneurs; ii) Financial Inclusion: Mapping of best practices of financial inclusion through FinTech, creating awareness and broader access to FinTech services and; iii) Social Inclusion: Deliver recommendations to develop a new financial ecosystem composed of public agencies, FinTech companies, SMEs and women-led SMEs.

The objective of this policy paper is to provide a state of play on the financial policy and programs enabling FinTech development and mapping them to the 14 economies. FinTech has created new pathways to interact with financial service providers, and to reach underserved SME segments, such as those located far from large urban areas, and for women-owned enterprises in need of finance. This created a huge potential to diversify financing instruments, fostering greater competition in SME finance markets, assisting SMEs in accessing funding and technological services that were once unavailable, while facilitating structural change in financial markets. The report presents key insights into the trends of FinTech development in the selected APEC member economies. This includes the understanding of the FinTechs in the market and the products and services they are currently offering, along with the common practices or innovative and emerging approaches FinTech companies are utilizing to achieve financial inclusion. The report also presents the current regulatory framework for the FinTech industry by economy and mapping of current initiatives by development banks, development agencies, other government bodies, and to some extent, non-government actors, to ease SMEs' access to FinTech providers.

This policy paper presents the findings of the assessment carried on by A2F Consulting on 14 APEC economies, structured into 6 key sections. Following the introduction, Section 2 illustrates the research methodology and summarizes the stakeholders' comments collected during interviews held for each APEC economy. Section 3 illustrates the state of play regarding regulatory and support program approaches in APEC members. This section will help the reader get an understanding of the economies' regulatory environment, and FinTech adoption status, and provides an overview of the enabling policy, programs, and technologies

[1] KPMG (2018). The Pulse of FinTech.

[2] OECD is currently in the process of producing an Update to the G20/OECD High-Level Principles on SME Financing, first developed in 2015, to take account of recent developments in the SME financing landscape. In this context they are developing a dedicated Principle on Fintech, which could be quite complementary to this paper.

supporting FinTech development. Section 4 maps the current initiatives taken by the public, private and international stakeholders to improve SME's access to FinTech services provided by the enablers highlighted in Section 3. A comprehensive catalogue of initiatives is provided which is disaggregated by economy and type of enabler. Section 5 provides the state of women's inclusion in the FinTech industry. This includes a preliminary assessment of the impact of the policy and technology enablers on gender inclusion in FinTech. Section 6 includes the detailed case studies of the FinTech ecosystem in each APEC economy. The analyses cover the FinTech regulatory framework, FinTech-based financial inclusion of SMEs, gender analysis, impact of Covid-19 pandemic on the FinTech, and illustration of the FinTech practices to achieve financial inclusion. Annex 1 presents a summary of APEC economies' core FinTech activities and Annex 2 includes the questionnaires and stakeholder interview guides.

3 APPROACH & METHODOLOGY

A2F Consulting conducted a desk review of the existing FinTech landscape for fourteen selected APEC economies. The selected economies represent different world regions: 7 economies were selected from the Asia region, 1 from Africa, 1 from Oceania, 3 from North America, and 2 from South America. The economies were further stratified as APEC developed economies, APEC developing economies, Latin American developing economies, and African developing economies. The desk review consisted of available studies, third party reports, relevant policy documents, regulations, and other publicly available information on existing initiatives to enhance the FinTech landscape. The objective was to understand the current trends in FinTech development, the state of play regarding the regulatory framework and support programs for APEC members, and financial innovations related to SMEs.

The desk review was complemented by key informant interviews with key stakeholders in each of the selected economies. A2F Consulting interviewed about 80 stakeholders, including government officials from different ministries, e.g., Ministry of Finance in Chile, Canada; institutional stakeholders, e.g., FinTech Colombia, FinteChile, Jewel Digital Ventures (Malaysia); business associations, e.g., The Philippines Chamber of Commerce, Federation of Independent Business, FinTech Association of Singapore the World Bank; traditional financial institutions, e.g., Bank Association of the Philippines; mobile network operators, e.g., Entel in Chile and FinTech companies, e.g., NIUM (Singapore), R3 (USA) and Questrade (Canada). Valuable information was collected to understand the state of play of the FinTech landscape, including policy and regulation, consumer protection and SME sector initiatives, gaps, and challenges.

Table 1: Data Collection Methodology by Type of Stakeholders

Stakeholders	Relevance	Selection Criteria	Approach of Engaging the Stakeholder
Policymakers	• Responsible for passing financial legislation • Responsible for the regulation and oversight of FinTech operations.	Key financial policymaker/regulator (e.g., central bank)	Engaged via Semi-structured Interview
Institutional Stakeholders	• Assist FinTech Startups to start their business • Assist existing FinTechs to grow by facilitating connections with financiers and influencers	Most important incubator, accelerator and startup hub	Engaged via Semi-structured Interview

Business Associations	• Responsible for lobbying for improvements in the SME sector • Aware of the major challenges, financial and non-financial needs of SMEs	Chamber of Commerce, Bankers Associations, Insurance Associations, SME Association or Trade Association for each economy	Engaged via Semi-structured Interview
FinTech Companies	• Key element of the FinTech ecosystem.	Selected FinTech companies listed in FinTech associations and/or present in FinTech rankings	Engaged via online survey. Selected FinTech companies engaged via Semi-structured interview.
Mobile Network Operators	• Enable FinTech companies to provide their services to SMEs	Mobile Network Operators	Engaged via Semi-structured Interview

Table 2: List of Key Informant Interviews Held

Economy	Type of Stakeholder	Institution Name
Australia	Regulator	Government of Australia - The Treasury
Canada	Regulator	Department of Finance Canada
	Business Association	Canadian Federation of Independent Business
	FinTech Company	Questrade
Chile	Regulator	Ministry of Finance
	Regulator	CORFO
	Business Association	FinteChile
	Business Association	Finnovista
	Institutional Stakeholder	UDD Ventures
	Institutional Stakeholder	Genesis Ventures
	Mobile Network Operator	Entel
	FinTech Company	Cumplo
	FinTech Company	amiPASS
	FinTech Company	Chita
	FinTech Company	TOC Biometrics
Colombia	Regulator	Ministry of Finance
	Regulator	Financial Regulatory Unit
	Business Association	Colombia FinTech
	Business Association	Finnovista
	FinTech Company	4ToldFintech CO SAS
	FinTech Company	MOVII SA

	FinTech Company	PayU Colombia
Hong Kong, China	FinTech Company	RiskFlo
	FinTech Company	NIUM
Indonesia	Regulator	Bank Indonesia OJK
	FinTech Company	NIUM
	FinTech Company	OVO
	Business Association	Indonesia Joint Funding FinTech Association
	Business Association	FinTech Lending Companies Association
	FinTech Company	Funding Societies
	FinTech Company	Ammana
	FinTech Company	Duitku
Kenya	Institutional Stakeholder	FSD Africa
	FinTech Company	IPSL
Malaysia	Regulator	Bank Negara Malaysia
	Regulator	Malaysia Digital Economy Corporation
	Regulator	Securities Commission Malaysia
	Business Association	Jewel Digital Ventures
	Institutional Stakeholder	Association of Development Finance Institutions of Malaysia
	FinTech Company	Enidea Sdn Bhd
	FinTech Company	Axiata Digital
	FinTech Company	Blocklime technologies Sdn. Bhd.
	FinTech Company	NIUM
	FinTech Company	Funding Societies
Mexico	Regulator	Ministry of Finance and Public Credit, Banking, Securities and Savings Unit
	Business Association	Association of Crowdfunding Platforms
	Business Association	Finnovista
	FinTech Company	Finerio Connect
	FinTech Company	Siembro
Singapore	Business Association	Singapore FinTech
	Business Association	The Association of Banks Singapore
	FinTech Company	NIUM
	FinTech Company	Funding Societies
	FinTech Company	Grab
Thailand	FinTech Company	Funding Societies
	FinTech Company	Appman
The Philippines	FinTech Company	NIUM
	Business Association	The Philippines Chamber
	FinTech Company	OmniPay
	FinTech Company	Ayannah
	FinTech Company	CreditBPO

	Business Association	Philippines Bankers Association
	Business Association	Philippines FinTech Association
United States	Regulator	Anonymous*
	FinTech Company	PayPal
	FinTech Company	R3
Viet Nam	Business Association	BK Holdings
	Business Association	FinTech Club Viet Nam
	FinTech Company	NIUM
	FinTech Company	Funding Societies

4 STATE OF PLAY REGARDING REGULATORY AND SUPPORT PROGRAM APPROACHES

4.1 OVERVIEW OF THE REGULATORY ENVIRONMENT

FinTech regulation falls under the jurisdiction of a diverse array of regulators and laws, depending on the type of service provided. FinTech itself covers many different sectors, from retail banking, commercial banking, investment management, insurance, and so on, which makes the regulation and oversight of FinTech difficult. Economies have been issuing different sets of regulations to cover the wide array of innovations that fall within their own definition of the term FinTech. A prime example is the USA, where FinTech companies do not fall under regulations specific to the FinTech sector overall but are subject to regulations depending on the service they provide, the states in which they do business, and how they collect and use customer data. For instance, a company providing robo-advising services to consumers may be subject to regulations by the Security and Exchange Commission (SEC) as a provider of investment services and by the Consumer Financial Protection Bureau (CFPB) as a provider of services to consumers. In most of the other economies studied, except Mexico, FinTech regulations fall under various categories like Person-to-Person (P2P) lending, crowdfunding, cryptocurrency, robo-advising, etc. and are covered by more than one law.

Most economies do not have a singular law regulating the FinTech sector. Since developing regulations for FinTech enterprises in different sectors can become quite complex, most economies do not have a singular law regulating the FinTech sector. However, Mexico has recently enacted a law specifically targeting the FinTech sector,[3] and many economies have been trying to emulate it. However, an analysis of the 2018 Financial Technology Institutions Law reveals that Mexico's FinTech law mainly regulates two types of companies: (i) electronic payment institutions (or electronic money issuers) and crowdfunding institutions. It does not cover other institutions that also use FinTech to reach their customers, nor does it provide regulatory guidance and oversight to other FinTech technology providers.[4] The experience from Mexico somewhat indicates that economies might need to be flexible regarding the creation of FinTech regulation, and a single law might not be enough or ideal to cover the whole FinTech sector.

Some economies have opted to establish a single point of contact for all matters related to FinTech regulation, to increase regulatory efficiency. As FinTech enterprises could be categorized under several different industries, the private sector, including FinTech firms, often finds it difficult to navigate the system to reach the right regulator for their issues or innovations. Some economies have already taken steps to ensure that this 'navigation' process is streamlined, by designating a point of contact for FinTech regulation matters. For example, Mexico has designated the Ministry of Finance, and Thailand has the Digital Economy Promotion Agency (depa). Such a strategy eases the communication barrier

[3] https://www.cgap.org/blog/mexicos-FinTech-law-leading-new-trend-FinTech-regulation
[4] Ibid.

between the private sector and the regulator and makes the process of engagement with the private sector simpler and more efficient. The designated authority is tasked with contacting the appropriate regulator and conveying the message.

4.2 STATE OF FINTECH ADOPTION

FinTech adoption appears to be mostly concentrated around the payment processes technology. In some of the Asian economies studied, namely Singapore and Hong Kong, China, digital payments are prevalent throughout the economy. For example, according to the EY Global FinTech Adoption Index 2019, the adoption rate of FinTech services jumped from 23 percent in 2017 to 67 percent in 2019 in Singapore.[5] In Hong Kong, China, the recent launch of the consumer e-voucher program led to a major leap in the use of electronic payment systems, with 2.2 million new accounts created and up to 48,000 businesses accepting digital payments. In Colombia, the digital payments channel has the highest acceptance and growth in recent times in the economy. Transactions made through the PSE (Secure Online Payment) button grew 121 percent between January and July 2020. In the other economies studied, digital finance is largely present in the payment processing sector. The pandemic has been a catalyst in this regard, with businesses rushing to introduce touchless payments and new digital sales channels such as online ordering, as customer mobility diminished. However, in some economies like Indonesia, digital payment options for both in-person and online transactions are still not widely available for merchants, and when the option exists, consumers have to pay an extra percentage for each transaction.

FinTech adoption is also evident in sectors such as money transfer, remittance and lending, albeit less prevalent. For example, in Australia, consumers reported using FinTech services for money transfers and budgeting/financial planning. The situation is similar in other developed economies like the USA. Even in developing economies like Malaysia, surveyed individuals reported a wide range of FinTech usage, around 78 percent of respondents were interested in using digital banking for bill payments, 69 percent for transferring money to family and friends, 62 percent for payments at retail locations, and 61 percent for managing deposits and withdrawals. The FinTech services in the lending sector have implemented machine learning techniques to automate loan making decisions. There were many other FinTech services especially for SMEs, like insurance, factoring, and invoice discounting, which were not used much by the SMEs. The lack of usage could be ascribed to their lack of financial literacy in using these services.

SMEs have been gradually adopting FinTech offerings, but there is still significant room for improvement. Like the typical "unbanked", SMEs face similar challenges and risks in dealing with the traditional financial institutions, such as banks. Therefore, FinTech companies have filled this gap and have been providing products and services to the unserved and underserved SMEs. Much like the individual consumers, SMEs have also mostly adopted FinTech for digital payment processing, and to some extent for lending. For instance, in Viet

[5] https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf

Nam P2P lending platforms are attracting a great number of SME borrowers even at the pilot stage of the initiative.[6] The P2P lending market in the economy has been growing substantially and is valued at around USD 7.8 billion (end of 2020).[7] Similarly, in Indonesia, at least 54 percent of borrowers of P2P lending were MSMEs. The sector can help them scale up their business and qualify for bigger bank loans.

FinTech companies have, for the most part, been able to reduce transaction costs for SMEs. For instance, the number of days it takes to open a bank account or get a loan decision has been reduced compared to traditional banking. Research from Yolt indicates that SME transaction costs can be reduced by up to USD 24,000 per month through FinTech[8]. In addition, another report found that SME expenses can be reduced by up to 7% from FinTech usage[9]. Finally, a study from the Wharton School of Business found that digitizing transfer payments significantly reduced travel and wait times, thereby raising the income of the rural Kenyan households using M-PESA by 5%-30%[10]. However, despite these efficiencies, adoption is yet to reach the same level reached in electronic payments. Given the large existing SME financing gap, there is still potential for improvement in this sector. In addition, many of the FinTech services, like insurance and factoring, are not availed by the SMEs, mostly due to financial illiteracy. Furthermore, some small enterprises may find the rates and fees of using FinTech services a deterrent. Many SMEs still offer discounts for cash-based transactions of their products, suggesting that cash is still their most preferred medium of transaction.

4.3 POLICY AND PROGRAMS SUPPORTING FINTECH DEVELOPMENT

4.3.1 Digital Authentication Systems

Structures for digital consumer identification are essential to foster the FinTech sector development. Digital identification of the customer base is key for FinTech development. Economies which lack universal digital identity solutions, such as digital ID cards, are not suitable to foster the FinTech sector. Earlier, financial services, especially lending, were primarily based on the personal knowledge of the client and manager. However, the increase in the volume of people seeking credit, and its availability, meant that this was no longer practical. The recent availability of data has fostered the emergence of alternative ways of offering financial services. However, the data can only be utilized to make financial marketing decisions if it can be uniquely traced back to individual customers. Customer identification is important because institutions need it to comply with regulations, assess risk for insurance and credit and provide a tailored customer experience. Digital identity promises to improve these while removing inefficiencies from processes that are largely manual today. Further,

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[6] *Fintech lending platforms to answer Viet Nam's SME Funding Crunch*. Unravel. (2020, October 8) Retrieved November 1, 2021, from https://unravel.ink/FinTech-lending-platforms-to-answer-Viet Nams-sme-funding-crunch/.

[7] https://kr-asia.com/fintech-startup-fvndit-notches-usd-30-million-for-its-Viet Namese-p2p-lending-firm

[8] https://thefintechtimes.com/yolt-finds-open-banking-could-save-sme-online-retailres-over-19000-a-month-in-transaction-fees/

[9] https://www2.deloitte.com/content/dam/Deloitte/au/Documents/financial-services/deloitte-au-fs-sme-digital-payments-270218.pdf

[10] https://knowledge.wharton.upenn.edu/article/can-fintech-make-the-world-more-inclusive/

digital authentication systems, both at the consumer and member economy level, helps combat cybercrimes and financial frauds, which is a rising concern. All the studied economies have identification systems, which can serve as the backbone of establishing robust digital authentication systems.

4.3.2 Open Banking

Open banking appears to be favored by policy makers. Open banking refers to the process of using Application Programming Interface (APIs) to open up consumers' financial data to third parties. Open banking enables FinTechs with better decision-making, access to third-party capabilities, greater scale of data; helps regulators support innovation, competition and system oversight; and provides customers better access to higher quality and more efficient products. The analysis of the economies, including the stakeholders' interviews, suggest that open banking has immense potential to improve the economies' financial inclusion landscape, especially in economies with limited development in credit bureaus. Over the past decade, the concept of open banking has been popular across many policy makers and banking sector regulators in the economies studied and beyond, and its impact is being felt in the banking sector. Economies like Singapore have advanced open banking regulations. The Monetary Association of Singapore (MAS) and Association of Banks in Singapore (ABS) have collaborated for democratizing banking data through public endpoints with regulatory guidelines.[11] Many big banks in Singapore like DBS (previously known as The Development Bank of Singapore Limited), HSBC, Standard Chartered and Citi, have already embarked on opening up their data to banking, API consumers and partners. Other developing economies in Southeast Asia like Malaysia and Thailand have also taken steps towards enhancing open banking.

The analysis indicates that open banking has immense potential to foster innovation and help introduce tailored products for SMEs. SMEs, especially in the developing economies, have limited information availability. Therefore, financial institutions are often unable to accurately assess an SME's creditworthiness and price accordingly, or tailor products and services. With open banking however, a lender may analyze an SME borrower's online sales and payments activity to assess the borrower's ability to repay a loan without a credit score or use utilities and telecommunications company data to confirm if a borrower has a history of paying bills on time.[12] A lender can also use various other user data to corroborate basic elements of a loan application more quickly and cheaply, such as verifying a small business' place of operation through geolocation data obtained from the entrepreneur's telecommunications company.[13] In addition, increasing availability of data on SME borrowers could also be used in member economy-level credit databases that do not contain individual information. This might help achieve more precise estimates of SME default risk, potentially resulting in reductions in SME risk premiums.

[11] https://blog.hidglobal.com/2021/09/open-banking-insight-singapore-perspective

[12] Creehan, S. (2019). How digital innovation can increase small business access to finance in Asia. Fintech for Asian SMEs, 1.

[13] Ibid.

However, data privacy and financial fraud are important concerns related to open banking. The digitalization that comes with open banking has also widened the threat landscape related to financial crime. There is an enhanced risk of identity theft and online fraud in the digital space. The concern is especially true due to malicious third-party applications which could access a customer's account and result in data breaches, hacking and fraud. Research evidence shows that 48 percent of consumers had negative opinions about open banking due to the data and cybersecurity concerns.[14] If not managed correctly, these digital frauds can erode trust in the FinTech sector. The regulatory frameworks surrounding open banking could cover aspects like licensing of third parties; restrictions around screen scraping practices; data privacy and disclosure/consent requirements; conditions with which third parties should comply for sharing and/or reselling data onward to "fourth parties" or using the data for purposes beyond the customer's original consent; and expectations or requirements for data storage and security.[15]

4.3.3 Data Protection Regulation and Cybersecurity

Establishment of frameworks for data sharing and data protection is common throughout the economies. An inclusive and secure financial data sharing ecosystem is one in which financial institutions, data aggregators and third-party application providers coordinate to provide data to consumers that are available, reliable, use-permissioned, secure and limited to application functionality.[16] While such data protection systems have been in place for some time now, increasing digitalization have led to new enhanced regulations and technologies concerning the collection, use and protection of customer information. Almost all the economies studied have issued some form of data protection laws, the most common of which was the requirement to ask citizens for consent before data about them may be collected, used, or shared. Economies like Australia, Canada, Chile, Thailand, Singapore, or USA had more comprehensive frameworks which established more rights for individuals, like data portability, the right not to be profiled or the right to be forgotten and so on. Their data protection laws were alike the General Data Protection Regulation (GDPR)[17] followed in the EU, which is an initial step towards transnational data protection laws. Singapore's Personal Data Protection Act (PDPA) even requires all organizations to designate one or more individuals to be responsible for the organization's compliance with the PDPA. Among the developing economies, Kenya's Data Protection Act also follows the GDPR.

Cybersecurity was also a top concern, and most economies have mitigation measures against cyber-attacks; however, there is a lack of robust economy member level cyber-security measure. Cyber-security is related to the overall data protection regulation but is more focused on stopping financial frauds like identity theft and loan stacking, as well as

[14] https://www.ey.com/en_gl/banking-capital-markets/five-approaches-to-secure-open-banking
[15] BCoB, S. (2019). Report on Open Banking and Application Programming Interfaces: BIS—Bank for International Settlements.
[16] CFSI (2016). CFSI's Consumer Data Sharing Principles: A Framework for Industry-Wide Collaboration
[17] The General Data Protection Regulation (EU) 2016/679 (GDPR) is a regulation in EU law on data protection and privacy in the European Union (EU) and the European Economic Area (EEA). It also addresses the transfer of personal data outside the EU and EEA areas.

financial crimes like money-laundering and tax-evasion, that are becoming common with rise in FinTech.[18] For instance, in Kenya, a cybersecurity firm's network of fraud sensors found that 51 percent of mobile-based transactions were identified as suspect.**[19]** In 2018, an estimated 14.4 million people in the USA were victims of some sort of identity fraud, according to Javelin Research.[20] There are several steps that the economies have taken to mitigate the incidence of online financial fraud, however, completely diminishing such frauds could be very difficult to achieve. For example, in the US there are several institutions to which a consumer can complain if they are victim of online fraud.[21] These systems help aggregate information and quickly identify the perpetuators. Consumer cyber-security is enhanced by programs, including awareness raising campaigns, which improve financial literacy. These campaigns help achieve the elementary level of financial protection.

4.3.4 Regulatory Sandboxes

Regulatory sandbox is used in many economies to test innovative products. The UK Financial Conduct Authority (FCA) defines it as a 'safe space' in which businesses can test innovative products, services, business models and delivery mechanisms without immediately incurring all the normal regulatory consequences of engaging in the activity in question." These testing grounds are especially relevant in the FinTech world, where there is a growing need to develop regulatory frameworks for emerging business models.[22] The sandbox in essence allows the FinTech companies to pilot a product or business model and help companies manage their regulatory risk during the testing period itself. Sandboxes are intended to bring the cost of innovation down, reduces barriers to entry, and allows regulators to collect important insights before deciding if further regulatory action is necessary.

Regulatory sandbox has the potential to promote innovation in the FinTech sector and reduce entry barriers. Regulatory sandboxes could be particularly useful in economies where regulatory requirements are unclear and where they may be creating barriers to entry for new FinTech firms. Sandboxes provide FinTech firms a better understanding of regulatory hurdles and help build consensus among different stakeholders. In addition, sandboxes provide a platform for forging partnerships, between the new entrants and existing FinTechs or financial institutions, through accelerator-type programs,[23] which in theory removes entry barriers for the newcomers. Furthermore, sandboxes provide a platform for the firms to tinker with their products and services and pilot the launch of new products, which can further foster industry innovation.

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[18] Identity theft is when fraudsters use stolen identities to wipe out customers' bank accounts or mobile wallet accounts while loan stacking is when fraudsters take multiple loans using stolen identities https://www.theeastafrican.co.ke/tea/business/kenya-identity-fraud-financial-services-industry-3441762

[19] http://www.connectingafrica.com/author.asp?section_id=761&doc_id=769857

[20] https://www.equifax.com/personal/education/identity-theft/types-of-identity-theft/

[21] https://www.usa.gov/online-safety

[22] https://www.bbva.com/en/what-is-regulatory-sandbox/

[23] A business accelerator is a program that gives developing companies access to mentorship, investors and other support that help them become stable, self-sufficient businesses.

However, stakeholders have divided opinions about regulatory sandboxes effectiveness. For instance, some stakeholders argue that the sandboxes make the regulators the gatekeepers of FinTech innovation, which may slow down or even halt innovation process. While others have pointed out that there have been very few success stories coming out of these sandboxes. One stakeholder indicated that the sandboxes contain “quicksand” as few FinTech firms graduate from them and those that do are not among the more successful FinTech firms. Such perceptions may create a stigma towards participation in these sandboxes. And without fintech participation, the regulatory sandboxes, which are expensive to setup and operate, may not result in any effective outcomes.

There are pitfalls to following the trend of establishing a regulatory sandbox without assessing the economy context. Launching and running a sandbox is a complex and sophisticated process. It requires a lot of learning and consumes significant human and financial resources. Regulatory sandboxes are expensive too and may cost over USD 1million to operate.[24] Moreover, evidence from CGAP studies have shown that sandbox-driven regulatory change is minimal and that most sandbox-tested innovations do not target excluded and underserved customers at the base of the pyramid. [25] Therefore, policy makers should look into alternatives before enacting regulatory sandboxes. There is a greater need to establish thought leadership by promoting policies that will have a broad impact on the entire FinTech ecosystem. Such policies include facilitating consumer-permissioned data access, adopting machine learning and alternative data in credit underwriting, and so on.[26] Innovation-friendly policies can enhance the impact of sandboxes if it is established.

4.3.5 Innovation Facilitators

Policy makers have promoted FinTech innovation hubs, which are initiatives aimed at generating business between startups and large companies. Regulators in many economies have begun setting up dedicated FinTech innovation units within their respective entities to take on FinTech developments with a more focused team.[27] These units are staffed with experts who have deep understanding of FinTech business and service models and the underlying technologies, as well as a of local and international regulatory and supervisory frameworks. The units are often responsible for acting as liaison between financial service providers and relevant departments within the regulatory entity running regulatory sandboxes and innovation hubs; analyzing new innovations and activities that fall outside existing regulatory scopes; and implementing programs and policy measures to encourage FinTech innovation.[28] Evidence suggests that many more FinTechs have been supported by innovation hubs than sandboxes and accelerators combined.[29]

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[24] https://www.cgap.org/blog/running-sandbox-may-cost-over-1m-survey-shows

[25] Less than 25 percent of sandbox tests focus on business models or technologies that explicitly address financial inclusion barriers or aim to address the financial needs of poor people

[26] https://pacscenter.stanford.edu/a-few-thoughts-on-regulatory-sandboxes/

[27] https://www.afi-global.org/wp-content/uploads/2020/07/AFI_FinTech_SR_ISBN_digital.pdf

[28] Ibid.

[29] https://blogs.worldbank.org/psd/four-years-and-counting-what-weve-learned-regulatory-sandboxes

Box 1: FinTech Innovation Hubs in Malaysia, Thailand, and Singapore

The **Malaysian Digital Economy Corporation (MDEC)** has developed the Fintech Booster program, a capacity building platform created in collaboration with Bank Negara Malaysia (BNM) as an offshoot of a survey conducted by BNM from their sandbox program to address the pain points of Fintech companies. The platform provides resources for both local and foreign companies that are based in Malaysia or looking to set up business in Malaysia through Legal & Compliance, Business Model, and Technology support.

The **Bank of Thailand (BOT)** has set up multiple cross-functional "squad" teams comprised of representatives from various departments who respond to new FinTech technologies by sharing different perspectives based on their expertise and learning from one another. Together, they analyze how the new product or technology will impact consumer behavior, the banking landscape, monetary policy, foreign exchange controls, and other areas. One squad team currently in place is studying the potential issuance of central bank digital currencies.

In 2015, the **Monetary Authority of Singapore (MAS)** established a dedicated FinTech and Innovation Group (FTIG) responsible for regulatory policies and developing strategies for technology and innovation, to better manage risks, enhance efficiency and strengthen competitiveness in the financial

Platforms promoting dialogue between FinTech regulators and FinTech companies have also facilitated innovation and regulation in the sector. The information gathered helps regulators receive market insight, so that they are able to make more informed policy decisions, while the FinTech companies get regulatory guidance[30] and are able to make more informed product decisions. Among the economies analyzed, there are quite a few examples of initiatives that promoted dialogue between regulators and innovators in the FinTech sector. For instance, the Consumer Financial Protection Bureau (CFPB) in the USA holds *Office Hours,* which involve one-on-one meetings with representatives from the CFPB to discuss financial technology, new products or services, partnering with a bank or FinTech company. In Thailand, the Digital Economy Promotion Agency (depa) also has a similar platform for sharing ideas, which has seen some success. Furthermore, FinTech festivals have promoted FinTech technologies among the practitioners. One such example is the Singapore FinTech Festival, the largest of its kind in the world, which promotes a knowledge platform for the global FinTech community. FinTech companies from all over the world gather here to showcase and share the newest development in fields like API, Big Data, Blockchain, Machine Learning, RegTech and Tech Risk.

4.3.6 Gender Disaggregated Big Data

Big data and data analytics open many opportunities for gender inclusion in FinTech and financial services in general. There are several ways through which big data can help mitigate

[30] Guidance is supplemental material published by an agency that helps clarify existing rules. These include interagency statements, advisories, bulletins, policy statements, questions and answers and frequently asked questions.

the gender gap in access to finance. First, big data can be analyzed for insights that improve decisions and give strategic confidence in business models that can help improve gender parity. Analysis of these data can provide valuable insights into patterns, trends, and discrepancies in access to finances from a gender perspective. Data analytics can also help predicting the demand for financial products among women, for example by analyzing social media posts. This can help the FinTech firms design and offer products accordingly. In addition, the implicit gender bias against women can be mitigated via the use of data analytics to achieve objective financial marketing decision making. For instance, loan making decisions can be made on characteristics that determine repay ability rather than gender. Further, gender-disaggregated data allows the policy makers to design equitable policies and measure the gender impact of such policies.

Box 2: Examples of programs using Big Data to achieve gender equity

While these programs are not necessarily FinTech related, they provide a window to how big data can bring gender equity in the FinTech sector.

Big data for financial inclusion and poverty mapping – World Bank – DRC, Cote d'Ivoire, Ghana, Uganda, Zambia – CDR & FTD

Using call detail records (CDR) and financial transaction data (FTD) from network operators and financial institutions, the project aims to identify lists of individuals, especially women, who are likely to be interested in financial services from IFC. The IFC will then use this information to develop products and marketing plans that appeal to potential clients, to ultimately increase the use of financial services by those who were previously unbanked. The project also aims to use household surveys together with big data to assess how financial services affect household expenditure, and to produce poverty maps.

Sex disaggregation of social media posts – UN Global Pulse, Data2X and the University of Leiden – Global – Twitter Tweets

This prototype tool infers the sex of users. The sex-disaggregation tool automates the process of looking up public information from Twitter profiles by analyzing users' names from a built-in database of predefined names (from sources such as official statistics) that contain gender information. Advancement in the tool could help disaggregate data when gender-disaggregated data is not available.

Identifying trends in discrimination against women in the workplace – UN Global Pulse, ILO, Govt. of Indonesia – Indonesia – Tweets & Social Media Posts

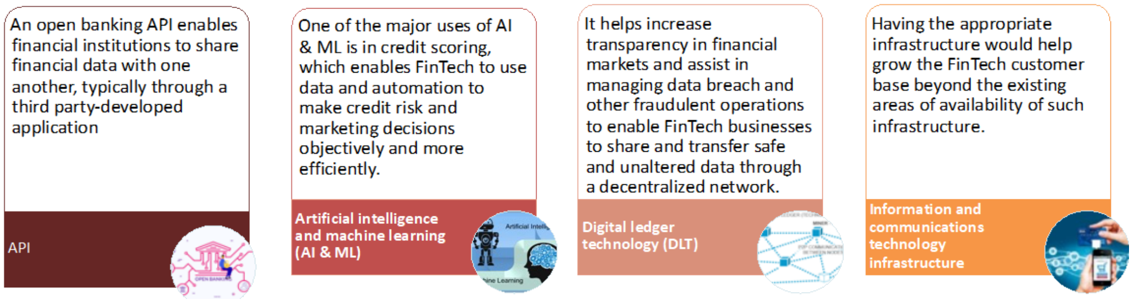
Public tweets (over 100,000 tweets over three years) were filtered using keywords related to discrimination, revealing four topics with a considerable volume of discussion: i) discrimination in job requirements; ii) permission for women to work; iii) perceptions on appropriateness of different types of

4.4 Technologies Supporting FinTech Development

Technologies like API and biometrics have supported the implementation of programs and policies to support FinTech development. APIs are the main enabler for open banking programs and have mainly been used to facilitate access to customers' payments and account information for non-bank firms in a regulated and secure way. An open banking API enables financial institutions to share financial data with one another, typically through a third party-developed application. Third party-developed applications are created by emerging FinTech companies and collaborators looking to make the digital banking industry inclusive.[31] For example, the formulation of the Open API Framework is one of the seven initiatives taken by the Hong Kong, China Monetary Authority (HKMA) to help Hong Kong, China achieve a secure, controlled and convenient operating environment to allow banks and third-party service providers (TSPs) to work together and develop innovative/integrated banking services.[32] On the other hand biometric technologies like fingerprint scanning have contributed to more robust authentication systems and enabled a broader adoption of digital banking in most of the economies.

Similarly, technologies like artificial intelligence and machine learning (AI & ML) and digital ledger technology (DLT), have helped FinTechs achieve full potential of the available data. AI & ML is used for a wide-range of activities like process optimization, robo-advising, cyber-security and customer service. But one of the major uses of AI & ML is in credit scoring, which enables FinTechs to use data and automation to make credit risk and marketing decisions objectively and more efficiently. For example, the Harvard Business Review reported that by using AI, one lender discovered that, historically, women would need to earn 30 percent more than men on average for equivalent-sized loans to be approved.[33] This technology has also helped reduce the decision-making time to mere seconds, which before took months, therefore making financial decision making very fast and enabling more people to seek financing. On the other hand, DLTs like blockchain have enabled more seamless and efficient FinTech services, from cost reductions to minimizing bureaucracy in traditional banking, which benefits both the FinTechs and the clients. It has also helped increase transparency in financial markets and assist in managing data breach and other fraudulent operations to enable FinTech businesses to share and transfer safe and unaltered data through a decentralized network.[34]

Figure 1: Technology Enablers support the implementation policies for FinTech development



[31] https://www.yodlee.com/open-banking/open-banking-api
[32] HKMA (2018). Open API Framework for the Hong Kong, China Banking Sector.
[33] https://hbr.org/2020/11/ai-can-make-bank-loans-more-fair
[34] https://nix-united.com/blog/blockchain-in-fintech-benefits-for-your-business/

5 MAP OF CURRENT INITIATIVES TO EASE SMES' ACCESS TO FINTECH

5.1 OVERVIEW

This section provides insights into initiatives that are helping to improve SMEs' access to financial services in APEC economies and boost their long-term economic growth. The SMEs were a key contributor to the studied economies as an important source of jobs, growth, and innovation. Despite their essential role, SMEs receive a disproportionately small share of credit from the financial system, a trend that persists across developed and developing economies. This gap has led public institutions such as regulators and private entities to focus their efforts in mitigating the finance gap. The observed trend of current initiatives suggests that the primary focus is on establishing a landscape that would help the FinTech sector expand in an inclusive manner and increase competition in the sector. This will eventually lead to the development of a myriad of FinTech products and services, especially for the SMEs, women-owned SMEs and traditionally underserved groups, thus allowing them to reach more SMEs that for one reason or another were not served by traditional banking. The initiatives that were identified could be broadly categorized as: i) Policy enablers, which includes open banking, regulatory sandbox, innovation facilitators, digital authentication, big data facilities and data protection; ii) Enabling technologies, which includes AI & ML, DLTs, e-money, crypto assets and so on.

In the case of open banking, it is noticeable that efforts have increased the adoption of new initiatives within APEC economies. For example, in Australia the Review on Open Banking initiative enables customers to have greater access and control over the data their banks hold on them. Similarly, the Smart Banking initiatives in Hong Kong, China aim to help the banking sector to embrace the enormous opportunities brought about by the convergence of banking and technology, thereby improving the quality of banking products and services for customers and SMEs. Another example is the Open Banking Framework implemented in Mexico, which promotes greater protection of consumer data and fosters competition; and not only applies to the major banks but also to all financial institutions and all financial transactions, making it more encompassing.

Most of the economies have either established a regulatory sandbox or contemplating its establishment. Some initiatives include the Australian Securities and Investment Commission's (ASIC) Regulatory Sandbox, the recently implemented Chilean Regulatory Sandbox, the Control Trial Environment (Espacio Controlado de Prueba) in Colombia, as well as the ones implemented in Singapore, Indonesia, and Malaysia. The primary reason for the establishment has been to provide a flexible regulatory framework for the FinTech companies to test the viability of innovative financial services. The expectation is that this 'piloting' will increase the range of products and services offered by FinTechs and will target underserved groups like the SMEs.

The creation of several innovation facilitators, such as FinTech hubs, SME digitalization programs, entrepreneurship networking platforms, was also observed. Some of these initiatives include the innovative finance and crowd-sourced equity funding by the Australian

Government, or the Canada Digital Adoption Program initiative, a program aimed at providing businesses with financing, tools, and resources needed to adopt e-commerce platforms and digitization plans. In the developing economies, programs like Tech Tycoon+ in Thailand provided network development opportunities for digital startups and technology entrepreneurs that are ready to grow in both domestic and international markets. On the other hand, some initiatives like the Digital Village in Indonesia aims to promote digital technology in the rural financial ecosystem, such as the digitalization of village payment transactions, village fund distribution & utilization and promotion of local non-cash movement through digital financial services. In addition, some development agencies like the Inter-American Development Bank (IDB) have financed initiatives that promote private sector transition to digital financial services.

Digital payments have grown in popularity as an area of focus for financial interventions over the last few years and exacerbated by the COVID-19 pandemic. This is why the public and private sectors have been strongly promoting initiatives to encourage the use of contactless digital means for SMEs, both in the collection of their invoices and in the payment of their suppliers. Some examples of these include the bank –Fintech partnership on Mobile POS in Canada, the Bill to regulate the interchange rates ("swipe fees") for the payments system in Chile, the Indonesian Digital Payments Regulatory Framework, or the eFactor Network in Mexico.

In addition, technology enablers like digital authentication, blockchain and cryptoassests helped promulgate FinTech services. For instance, iAM Smart provided all Hong Kong, China residents with a single digital identity and authentication to conduct transactions online. Users can make use of the biometrics in their personal mobile device to authenticate their identities, which is verified against their Hong Kong, China ID cards during the iAM Smart registration process. Hyphen Group helped consumers across Hong Kong, China, Viet Nam, Malaysia, Chinese Taipei, Thailand, Singapore, the Philippines, and Indonesia save time and money by offering a free and easy online market comparison of banking and insurance products. Both consumers and service providers were benefited from the lower cost of acquisitions, higher conversion rates and unlimited reach to consumers through the internet. The Canadian firm Bitfury provided a premier blockchain as a service solution, which helped the Canadian government and businesses integrate blockchain systems into their operations to increase time and cost efficiency.

Our assessment suggests that there is a dearth of gender-focused initiatives among the studied economies. Nonetheless, some initiatives were identified to have a gender-focus, primarily focused on promoting and increasing the use of digital financial services and FinTech services by women, whether they are individuals or SME owners/managers. For instance, the Sandbox Challenge in Mexico evaluated FinTechs from a gender impact perspective through a entrepreneurship competition, and it included a special prize category for startups either founded or led by women, and/or with business models focusing on financial products targeted towards women. In Kenya, Pezesha, started by a female FinTech entrepreneur, provides a digital platform where micro, small and medium-sized enterprises (MSMEs) can tap into finance after being matched with investors seeking to foster productivity and growth among small businesses. Pezesha's customer base is 80percent youth and 60percent women.[35]

5.2 MAP OF CURRENT INITIATIVES

Table 3: Map of Current Initiatives to Ease SMEs' Access to FinTech

Economy	Type of Enabler	Policy/Technology Enabler	Initiative to Ease SME's Access to FinTech
Australia	Public	Open Banking	**Review into Open Banking in Australia** On 9 May 2018, the Government agreed to all the recommendations of the Review into Open Banking in Australia (Farrell Review). Open Banking will give customers greater access to and control over the data their banks hold on them. It creates a secure environment, where customers can direct that they, or trusted and accredited third parties chosen by them, be provided with their banking data. The government outlined a phased implementation timetable starting on July 2019 to July 2020.
Australia	Public	Regulatory Sandbox	**Australian Securities and Investment Commission's (ASIC) Regulatory Sandbox** On 15 December 2016, ASIC introduced industry wide licensing exemptions to allow eligible FinTech businesses to test certain specified services for up to 12 months without an Australian financial services or credit license. Eligible companies need only send ASIC written notice of their intention to test under the exemption. The regulatory sandbox provides a flexible regulatory framework, which makes it easier for FinTech companies to test the viability of innovative financial services, increasing the potential for new finance options. On 9 May 2017, the Government announced an enhanced regulatory sandbox. Legislation for an enhanced regulatory sandbox will shortly be introduced to the Parliament, which will allow more businesses to test a wider range of new financial products over a longer period, further facilitating innovative new finance. The commencement date was announced as September 1st, 2020.

[35] https://www.afi-global.org/newsroom/blogs/pezesha-hopes-fintech-showcase-win-inspires-young-women-in-africa/

Australia	Public	Innovation Facilitators	**Innovative finance and crowd-sourced equity funding** The Government has introduced a CSEF framework for public companies, which commenced on 29 September 2017 and provides a new funding avenue for early-stage businesses, whilst still providing a level of investor protection. The Government has extended the CSEF regime to enable more closely held proprietary companies to raise funds through CSEF, with accompanying modifications to increase accountability and investor protection.
Canada	Public	Innovation Facilitators	**Canada Digital Adoption Program initiative** The federal government recently introduced the Canada Digital Adoption Program initiative, a CAD 4 billion program aimed at providing businesses with financing, tools, and resources needed to adopt e-commerce platforms and digitization plans.
Canada	Public	Data Protection Regulation and Cybersecurity	**CyberSecure Canada** The federal government has also introduced the CyberSecure Canada program, a certification program that aims to raise the cyber security baseline among Canadian small and medium-sized enterprises. The goal is to increase consumer confidence in the digital economy and better position SMEs to compete globally.
Canada	Public /Private	Digital Payments	**Mobile POS** National Bank of Canada partnered with Mobeewave, a Canadian FinTech, to provide mobile POS contactless solutions for SMEs through an app, without any additional attachments.
Canada	Public	Digital Payments	**Retail Payments Activities Act** Grants Fintechs greater access to national payment infrastructure, to be supervised by the Bank of Canada
Canada	Private	Digital Banking	**SmartBanking for Business** Canadian Imperial Bank of Commerce (CIBC) has launched its SmartBanking for Business service in collaboration with FinTech firms Xero, Ceridian, and Intuit. An online service platform to connect several financial services for SMEs in Canada.

Canada	Private	Crypto assets/AI	**Bitfury** FinTech company providing core AI products and integrated AI computing systems, as well as full-service AI/blockchain enterprise solutions for corporations and governments. Bitfury also provides a premier blockchain-as-a-service solution, designed to help governments and companies integrate blockchain into their operations.
Chile	Public	Innovation Facilitators	**Digitaliza tu Pyme** A program of the Ministry of Economy along with CORFO, that seeks to create awareness, deliver training and foster the adoption of tools such as e-commerce (Pymes en Línea), social media, delivery and logistics, digital tax matters (Despega Mipe) and business management. The aim is to digitalize 250 thousand SMEs by 2022.
Chile	Public	Innovation Facilitators	**Innova Fosis** Has the objective to increase sales of entrepreneurs from vulnerable backgrounds through the adoption of digital technologies. It invites civil society (private legal entities, whether for profit or not-for-profit), academia (public or private universities and institutes of higher education) and the private sector to present innovative solutions that generate novel responses to a changing and complex reality.
Chile	Public	Innovation Facilitators	**Fortalece Pyme** Programme launched by CORFO in 2020, seeking to support the installation and operation of centers to help SMEs improve their levels of productivity through the provision of services aimed at the adoption and use of digital technologies.
Chile	Public	Innovation Facilitators	**FinTech Bill** During 2020 Chile announced that it is working on a FinTech bill with the aim of providing the same opportunities for those companies that provide financial services with a more intensive use of technology than traditional companies, and thus reduce the regulatory gap among them. The bill has the potential to promote competition in the financial markets and financial inclusion.

Chile	Public	Innovation Facilitators	**Bill to regulate the interchange rates ("swipe fees") for the payments system** The project establishes: the interchange rates for local transactions with payment cards will be subject to maximum rates, differentiated by card type (credit, debit, or prepaid); the Central Bank will determine the maximum interchange rates by card type; the levels and structure of the maximum interchange rates will be established through an economic study carried out by an independent technical entity with proven international experience.
Chile	Public	Innovation Facilitators	**Start-Up Chile** A public business accelerator program created for high-potential entrepreneurs to bootstrap their startups using Chile as a platform to go global. The program's objective is to generate a socio-economic impact through the acceleration of innovative technology firms that allow the sophistication and diversification of Chile's economic matrix.
Chile	Public	Innovation Facilitators	**SME Credit Programme** In 2017, CORFO launched the SME Credit Programme to improve SME access to alternative sources of finance and non-bank financial intermediaries.
Colombia	Development Bank	Innovation Facilitators	**IDB Invest/Alpha Capital** IDB Invest, a member of the IDB Group, provided a loan to AlphaCapital S.A.S. (AlphaCredit) for an amount in Colombian pesos equivalent to USD 40 million. The resources will support the expansion of AlphaCredit's lending portfolio targeting retirees and pensioners, independent workers, and micro, small and medium-sized enterprises (MSME) through digital platforms. The portfolio also includes loans guaranteed by the Government of Colombia to mitigate the economic impact of the COVID-19 health crisis.
Colombia	Public /Private	Innovation Facilitators	**The Ministry of Commerce, Industry and Tourism, and iNNpulsa Colombia** Make available two preferential credit lines, with the objective of allowing the flow of money to entrepreneurs to mitigate some of the economic effects of COVID-19 in the economy, thanks to the alliance with Bancóldex, the National Guarantee Fund (FNG), Banco Agrario, different Colombian FinTech and other entities of the sector.

Hong Kong, China	Public	Innovation Facilitators	**FinTech Facilitation Office (FFO)** Established by the HKMA in 2016, facilitates the healthy development of the FinTech ecosystem in Hong Kong, China and promotes Hong Kong, China as a FinTech hub in Asia. Among other things, the FFO acts as a platform for exchanging ideas of innovative FinTech initiatives among key stakeholders and conducting outreaching activities; an interface between market participants and regulators within the HKMA to help improve the industry's understanding about the parts of the regulatory landscape which are relevant to them; an initiator of industry research in potential application and risks of FinTech solutions; and a facilitator to nurture talents to meet the growing needs of the FinTech industry in Hong Kong, China.
Hong Kong, China	Public	Digital Banking	**Smart Banking initiatives** The initiatives aim to help the banking sector to rise to a higher level and embrace the enormous opportunities brought about by the convergence of banking and technology, thereby improving the quality of banking products and services for customers and SMEs.
Hong Kong, China	Public	Innovation Facilitators	**FinTech 2025** Aims to encourage the financial sector to adopt technology comprehensively by 2025, as well as to promote the provision of fair and efficient financial services for the benefit of Hong Kong, China citizens and the economy.
Hong Kong, China	Public	Digital ID	**iAM Smart** Provides all Hong Kong, China residents with a single digital identity and authentication to conduct government and transactions online. Users can make use of the biometrics in their personal mobile device to authenticate their identities, which will have been verified against their Hong Kong, China ID cards during the iAM Smart registration process.
Hong Kong, China	Private	Balance Sheet Lending	**Welend** WeLend is the largest purely online lending platform in Hong Kong, China, combining technology and A.I. solutions. WeLend leverages on A.I. and big data analytics to provide an innovative online lending experience.

Hong Kong, China	Private	InsurTech/Robo-advisor	**Hyphen Group (founded as CompareAsiaGroup)** Hyphen Group is a comparison platform in Asia, committed to finding consumers the right financial products, helping save time and money. The company helps consumers save time and money by offering a free and easy online market comparison of banking and insurance products, as well as broadband and mobile plans etc. Providers benefit from lower cost of acquisitions, higher conversion rates and unlimited reach to consumers through the internet. Under the Hyphen Group umbrella are several brands each localized for their respective markets: MoneyHero in Hong Kong, China and Viet Nam, CompareHero in Malaysia, Money101 in Chinese Taipei, MoneyGuru in Thailand, SingSaver in Singapore, MoneyMax in the Philippines, and HaloMoney in Indonesia.
Indonesia	Private	SME Lending	**Peer-to-peer lending platform** Modalku, a local peer-to-peer lending platform, offers individual investors to chance to provide funding to chosen MSMEs with a deposit as low as Rp 10 million.
Indonesia	Public	Innovation Facilitators	**Digital Finance Innovation Road Map and Action Plan 2020-2024** This road map launched by Indonesia's Financial Services Authority (OJK), complements a "regulatory sandbox" operated by OJK, in which FinTech startups can conduct live experiments to trial new products or business models in a controlled environment. It also allows OJK to receive immediate feedback and test upcoming regulations. With a more diverse range of loan products, SMEs stand to benefit by finding products best suited to their business.
Indonesia	Public	Innovation Facilitators	**E-smart IKM** The Small and Medium Industries and Miscellaneous (IKMA) of the Ministry of Industry, launched the E-Smart IKM program to capture online transaction opportunities, as part of the Gernas BBI, a local movement as a way of supporting domestic industries/products.
Indonesia	Public	Innovation Facilitators	**Gernas BBI Programme** Member economy-level program as a way to support local industries/products. The government's intensive Gernas BBI campaign also aims to increase MSME/IKM onboarding on digital platforms, with a target of 30 million MSME/IKM onboarding by 2023.

Indonesia	Public	e-Money	**Local Government Digital Wallet (TangselPayand OsingPay)** Local government's white label digital wallet solutions aimed digitizing payments. It aims to increase total value of cashless transactions, reduce corruption and promotes efficiency in the local government financing system. The initiative is supported by Ministry of Home Affairs and e-wallet providers such as Paytrenand Linkaja.
Indonesia	Public /Private	Innovation Facilitators	**Digital Village** The digital village initiative aims to promote Internet of Things, wireless network, e-commerce system to promote efficiency in the public service delivery. One of the objectives of digital village is also to digitalize village payment transactions, village fund distribution & utilization and to promote economy-level non-cash movement through digital financial services. The program to promote digital financial services in village administration and Village Owned Enterprises (BUMDES) is supported by Bank of Indonesia and several e-commerce companies such as Tokopedia.
Kenya	Public /Private	Digital Payments	**Kopo Kopo** A FinTech that offers digital payment access to merchants in Kenya through M-PESA, applies Big Data analytics to merchant payment transaction data to offer SMEs a range of value-added services, such as unsecured, short-term loans.
Kenya	Private	Innovation Facilitators	**Pezesha** Translated as "financial empowerment" from Kenyan Swahili, provides a digital platform where micro, small and medium-sized enterprises (MSMEs) can tap into finance after being matched with investors – including banks, microfinance institutions and other retail lenders – seeking to foster productivity and growth among small businesses.
Kenya	Private	Robo-Advisors	**Arifu** Smart personal learning assistant and content marketplace that offers advice and financial skills training to vulnerable groups, including farmers, youth, women and MSMEs, through mobile phones. Users of both smart and feature phone can learn via SMS, WhatsApp and Facebook Messenger to develop new skills, discover products and services and earn rewards.

Malaysia	Public	Regulatory Sandbox	**Regulatory Sandbox** BNM's regulatory enhancement initiative to facilitate the development and adoption of FinTech solutions by introducing a regulatory sandbox framework in 2016 laid the groundwork for digital banking. It gave FinTech companies regulatory flexibility to experiment with technology-driven customer solutions. The sandbox acted as a catalyst for technological innovations in financial services that will contribute to the growth and development of Malaysia's financial sector. Participation in the sandbox initiative has helped FinTechs to raise capital.
Malaysia	Public	Innovation Facilitators	**Financial Technology Enabler Group** In 2016, BNM established a Financial Technology Enabler Group to formulate and enhance regulatory policies that facilitate Malaysia's adoption of financial technology.
Malaysia	Public	Innovation Facilitators	**Alliance of Fintech Community** The SC launched the "Alliance of FinTech Community" (aFINity) in 2015 to catalyze and nurture Fintech development in the Malaysian capital market. It serves as a platform for continuous interactions between the SC as a capital market regulator and all relevant Fintech stakeholders such as innovators, financial institutions, government agencies, ecosystem players, and investors. Among others, aFINity is aimed at understanding the needs of the fintech community and to provide regulatory guidance and policy steering to promote responsible innovation.[36]
Malaysia	Public	MSME financing	**Equity Crowdfunding (ECF) and Peer-to-peer (P2P) Financing** SC introduced the ECF and P2P financing frameworks in 2015 and 2016 respectively to allow for alternative market-based financing avenues for MSMEs to raise funds. ECF has helped to address financing gaps in early-stage capital while P2P financing supported MSMEs to raise the required working capital or capital for growth.

[36] https://www.sc.com.my/development/digital/embracing-innovations

Mexico	Public /Privat e	Innovation Facilitators	**Sandbox Challenge Mexico** Regarding joint public and private initiatives to promote female financial inclusion, in 2020 the CNBV, with the joint participation of the United Kingdom Embassy, the Prosperity Fund, Distrito Emprendedor, Hogan Lovells and other law and consultancy firms, organized and sponsored the first Sandbox Challenge in Mexico. This is a regulatory competitive process to promote innovation in the FinTech environment. During the Sandbox Challenge, FinTech startups were evaluated from a gender perspective and the competitive process included a special price category for those startups whose business models were focused on financial products targeted to women or that were founded or led by women. This was a first, both for the Sandbox and women.
Mexico	Public	Open Banking	**Open Banking Framework** Mexico's open banking regulation promotes greater protection of consumer data and fosters competition and not only applies to the major banks but also to all financial institutions and all financial transactions, making it more encompassing. In addition, Mexico's open banking framework makes the introduction of open APIs mandatory.
Mexico	Public	Regulatory Sandbox	**Regulatory Sandbox** The FinTech Provisions contemplate "Innovative Models" (Modelos Novedosos), also known as a regulatory sandbox, which implies the possibility for the authority to issue temporary authorizations to operate innovative services (the use of tools or technology different to those available at the time of the request for authorization) in a controlled and less costly environment. This space allows companies to offer financial services to a limited number of customers, using innovative technological tools or the means to test them, before offering them to the public on a massive scale.

Mexico	Private	Factoring	**eFactor Network** A Mexico-based platform that enables electronic factoring services for SMEs that wish to sell their accounts receivable. The e-Factor Network platform allows large buyers, suppliers, and financial institutions (banking and non-banking), to optimize working capital needs online by means of efficiently capturing electronic discounts in real-time. The most important value proposition that eFactor Network has provided its SME clients is allowing them to operate on a single, multi-region, multi-currency, multi-institution solution. eFactor Network provides significant benefits for SMEs by unlocking capital that many of them need that was unavailable in the past from the financial institutions.
Singapore	Public	Innovation Facilitators	**The Go Digital Programme** Created by the Infocomm Media Development Authority helps SMEs develop Industry Digital Plans (IDPs) to chart out the various stages of their transition to digitized workflows (Smart Nation website).
Singapore	Public	Innovation Facilitators	**GoBusiness** Jointly developed by the Ministry of Trade and Industry, Smart Nation and Digital Government Group, and GovTech as the online platform for all business interactions with the government.
Singapore	Public	Innovation Facilitators	**Chief Technology Officer (CTO)-as-a-Service scheme** Infocomm Media Development Authority (IMDA) launched the Chief Technology Officer (CTO)-as-a-Service scheme to provide consultancy services to SMEs on areas such as data analytics, cyber-security, and artificial intelligence
Singapore	Public	Regulatory Sandbox	**Regulatory Sandbox** MAS has also created Regulatory Sandboxes to allow FinTech firms to conduct predetermined operations without complying to all regulations that would be naturally required. The goal of the regulatory sandbox is to even the playing field with FIs, who have no licensing restrictions to test out new innovative products. The sandbox provides an environment where new ideas can be tested by relaxing some regulations but restricting the scope of activities and/or market to control the extent of any potential damages. The regulations to be relaxed are determined on a case-by-case basis and will last for a specified duration, after which all regulations will begin to apply.

Singapore	Private	Robo-advisor	**GoBear** GoBear is a financial products comparison site. Users can search, compare, and select the plan, card, or loan they want. On April 8th, 2021, GoBear was acquired by Finder.
Singapore	Private	Insurtech	**Singapore Life** Singapore Life is a life insurance company fully licensed by the Monetary Authority of Singapore. Singapore Life offers high net worth universal life solutions for those that prefer Singapore and the Singapore regulatory environment as a destination for their wealth and protection needs.
Thailand	Public	Innovation Facilitators	**Digital Economy Promotion Agency (depa)** The Thai government established the Digital Economy Promotion Agency (depa) under the Digital Development for Economy and Society B.E. 2560 (2017), it aims to support the development of digital industry and innovation. It will promote digital technology adoption to benefit the economy's market, society, culture and security, according to Article 35 of the Act. A commission, whose members are appointed by the minister of Digital Economy and Society, is authorized to regulate and ensure the agency's performance. It has several tasks mainly to develop a strategic plan for the promotion of the digital economy in accordance with economy-level policy and plans, promote and support private investment and business operations related to the digital industry and innovation
Thailand	Public	Innovation Facilitators	**depa JumpStart** the digital startup incubation program that offers opportunities for entrepreneurs and interested people from all over the economy. depa Jumpstart combines online and offline learning for entrepreneurs or general people to confidently start a Digital Startup business
Thailand	Public	Innovation Facilitators	**depa Accelerator Program x Techsauce** startup support program that depa collaborates with Techsauce to find 20 Startup teams joining the program with a global mentor through a partnership between private and public sectors. Thailand has joined the program to increase market opportunities and increase Thailand's readiness in terms of technology to reach the international level and emphasize the importance of digital startups that use digital technology intensely

Thailand	Public	Innovation Facilitators	**Tech Tycoon+** Network development activity for digital startups and technology entrepreneurs that are ready to grow in both domestic and international markets. It consists of intensive scale up business training activities, business matching activities to expand business opportunities and one-to-one mentoring activity to prepare Digital Startup entrepreneurs to grow into regional and global enterprises
Thailand	Public /Private	Innovation Facilitators	**Startup Battleground** Hackathon event held at Digital Thailand Big Bang. This is due to the cooperation between the public sector, the Thai private sector and the global private sector, including the Digital Economy Promotion Agency (depa) and Hubba Company Limited (HUBBA Thailand) together with the leading Techstars (Techstars) accelerator. World class Hackathon with the objective of raising ideas to create new innovations for the top 10 target industries (S-Curve) that will benefit the economy's development. It also serves as a platform to create opportunities for new startups to gain experience from participating in workshops with highly qualified speakers and real stage competition
The Philippines	Public	Regulation	**Open Finance (BSP Circular No. 1122 series of 2021) as a Policy/Technology Enabler for the Philippines** The Open Finance Oversight Committee Transition Group (OFOC-TG) was established to develop the operational policies and standards towards the creation of the formal OFOC. The BSP is finalizing the roadmap and standards to be used in the pilot uses cases as follows: • Account aggregation/Statement sharing • Direct Debit or fund transfer • Account Opening
The Philippines	Public	Regulation	**BSP Circular No. 1108 series of 2021 – Guidelines for Virtual Asset Service Providers as a Policy/Technology Enabler for the Philippines** This circular provides the enhanced guidelines to be adhered to by BSP-registered VASPs to ensure robust risk management in terms of AML, cybersecurity, and consumer protection risks.

The Philippines	Public	Regulation	**BSP Circular No. 1105 series of 2020 – Guidelines on the establishment of Digital Banks as a Public Type of policy enabler** This circular sets out the licensing framework for a new type of bank that purely delivers banking products and services in the digital space in order to capture a broader reach of unserved and underserved market segments.
The Philippines	Public	Innovation Facilitators	**Technology Integration & Adoption Programme** The Bangko Sentral ng Pilipinas is seeking to "lead by example" by further integrating technology into its own operations. To do so, the BSP has partnered with RegTech for Regulators Accelerator (R2A), an organization started by USAID, the Gates Foundation, and the Omidyar Network to help regulatory authorities adopt new technologies. Working with R2A, the BSP is developing its own set of application programming interfaces (APIs) to allow supervised financial institutions to submit reporting digitally and automatically. This will enable the BSP to receive data more frequently, validate data quality, and apply new tools for the analysis of the data that banks, and other financial institutions submit.
The Philippines	Private	Digital Banking	**Project i2i** UnionBank has sought to create a new ecosystem to facilitate domestic remittances between rural banks by partnering with the US-based FinTech firm ConsenSys, created a blockchain-based, interbank payment switch to streamline and digitize the process of sending domestic remittances from one rural Bank to another. The hundreds of rural banks in the Philippines are primarily deposit-taking institutions that extend high-interest loans to farmers, fisherfolk, and microenterprises in rural communities.
The Philippines	Public	Innovation Facilitators	**National Retail Payment System (NRPS)** Created by the BSP, the NRPS states that all supervised financial institutions must adopt transparent and fair market pricing of electronic payments, transition from exclusive bilateral to multi-party clearinghouse agreements, and provide electronic fund transfer facilities in all available channels for individuals and SMEs
The Philippines	Public	Digital Payments	**PESONet** Philippine EFT System and Operations Network—batches electronic fund credits for transfers between banks with the aim of replacing the use of checks.

The Philippines	Public	Digital Payments	**InstaPay** Electronic fund transfer system that enables “almost immediate” transfers of up to PHP 50,000 (or about USD 100) on demand.
USA	Private	Digital Payments	**Square** Square, a US-based FinTech founded in 2009, introduced an innovative way to accept card payments without the use of a traditional, clunky, and expensive POS device, making it possible for any SME to convert their smart phone or tablet into a mobile POS (mPOS) device with a USD 10 card reader to accept credit, debit cards, and NFC payments. The company has revolutionized the payments sector by making it extremely easy for a wide variety of small businesses, from a single vendor at a farmers’ market to multi-location businesses, to fully digitize their payments with an integrated software and card reader solution. Square has millions of merchants using its software and card readers in the United States, Canada, Japan, Australia, and the United Kingdom.
USA	Public	Innovation Facilitators	**Virtual Innovation Office Hours Programme** The Consumer Financial Protection Bureau (CFPB) and the Office of the Comptroller of the Currency (OCC) hosted joint, virtual Innovation Office Hours, July 29-30, 2020, as part of the American Consumer Financial Innovation Network (ACFIN). Office Hours are one-on-one meetings with representatives from the OCC and CFPB Offices of Innovation to discuss financial technology (FinTech), new products or services, partnering with a bank or FinTech company, or other matters related to responsible innovation in financial services. Each meeting will last no longer than one hour.
USA	Private	SME Lending	**Amazon Lending** Founded in 2012 to extend credit to small businesses selling on Amazon’s platform. Amazon uses internal algorithms to choose sellers based on data points, such as the frequency at which merchants run out of stock, the popularity of their products and inventory cycles.
USA	Private	Balance Sheet Lending	**Fundbox** AI-powered financial platform for small businesses that offers fast and intuitive access to business credit. Since their founding in 2013, nearly 300,000 small businesses have applied for loans with this FinTech.

USA	Private	Cryptoassets	**Alphapoint** White-label software company powering crypto exchanges worldwide. AlphaPoint has enabled over 150 customers in 35 economies to launch and operate crypto markets, as well as digitize assets. AlphaPoint and its award winning blockchain technology have helped startups and institutions discover and execute their blockchain strategies since 2013.
Viet Nam	Private	SME Lending	**Finaxar** Finaxar Viet Nam, Indovina Bank, and Cathay Financial Holdings partnered up to improve access to financing for Viet Namese SMEs. The partnership provides working capital to SMEs with easier, more streamlined access to credit through Indovina Bank's online credit line product powered by Finaxar. Finaxar Credit Line is a first-in-region, completely online, automated credit financing solution, specifically tailored for Viet Nam's SMEs. Business owners can access funds of up to VND500 million (USD 21,700) through this online system, which charges a small fee.

5.3 INNOVATIVE MODELS TO IMPROVE FINANCIAL INCLUSION

The focus of this exercise is to identify innovative models and technologies private sector FinTechs have utilized to improve financial inclusion, especially to SMEs and women. Table 4 presents examples of key FinTech innovations by economy, as well as common practices that are specific to the economies studied. Most of the models assessed are from the private sector, however in cases where a government or regulator had innovative policies in place, they were also included. In the table below most of the innovative models listed are from the private sector financial institutions or FinTech companies, a few however, such as Canada's shift towards digital identity wallets, engage both private and public partners. The expected and observed impacts of each model are also presented.

Table 4: Innovative Models to Improve Financial Technology

Innovation	Summary of the Innovative Model	Expected/Observed Impact
Neobanks	Australian "neobanks" offer faster, simpler service and more competitive rates by providing banking services entirely within a mobile app.	– More competitive rates and lower fees for neobank users – Faster and more diversified service for neobank users
Digital Identity Wallets	Canadian local and provincial governments are partnering with FinTechs and advisory boards to introduce digital identity wallets	– Allow full digitalization of loan and account applications – Increase security of digital payments, reducing theft and fraud

	that will increase the security of FinTech transactions and applications.	
Streamlining User Experience	Bancolombia has 3 products to improving the user experience: i) simplified savings account; ii) small loans based on cash flow analyses & iii) and a chatbot that provides financial advice	– Uptake in opening of savings account – Growth in savings among users – Greater credit availability to small businesses – Easier access to customer service, promoting financial literacy
Gamifying apps	Malaysian FinTechs have been "gamifying" their apps and those of SME clients to improve customer experience and engagement.	– Increase in FinTech uptake among Malaysian consumers – Improved customer retention and engagement for SMEs
Targeted loan offers	Crowdfunding companies in Mexico offer microloans at reduced interest by using different algorithms to approve loans within hours.	– Quicker loan approvals – Lower interest rates for microloans – Reduced collateral requirements, improving loan access
Simplified User Requirements	A conglomeration of banks released PayNow, a digital payment platform that allows the payment with only a phone number or personal ID number.	– Faster payments – Growth in digital payment user base – Less stringent authentication requirements

6 FINTECH GENDER INCLUSION

6.1 GENERAL TRENDS IN GENDER INCLUSION

The APEC economy level analysis indicated that women generally trail men in the use of FinTech and financial inclusion, especially in developing economies. This lower level of FinTech participation was also reflective of the fact that women in general had lower participation in the financing sector, lower labor force participation, and lower earnings. For example, in Malaysia, women are less likely to own a bank account or to have borrowed from a financial institution, and they are over 10 percent less likely to have a debit card. In terms of digital finance, women are over 10 percent less likely to have made or received a digital payment within the last year. [37] The case was similar in economies like Indonesia or Kenya. A survey of 28 economies, including many of the economies studied in this paper, confirms this gender gap in FinTech participation.[38] The study further adds that FinTech participation among women is lower due to lack of enthusiasm among women for new FinTech products, security concerns among women online, among other. Furthermore, developing economies have 200 million more male than female cell phone owners.[39] Without access to mobile technology, millions of women are further excluded from secure and convenient digital finance services. Conversely, the trend appears to be different in developed economies like Australia or Canada, where both men and women were highly involved in the financial services and FinTech sectors.

The situation may have been exacerbated due to FinTechs lacking a gendered focus. This means that the FinTechs are not offering enough products and services catered to women, who have different financial needs compared to men.[40] According to one stakeholder in the FinTech industry, they are focused on developing products and services to cater the overall consumer or SME sector, but not particularly tailored for women and women-owned SMEs. That is to say that they are targeting overall economic inclusion, which in their view includes women. This problem could be partially stoked due to the lack of female entrepreneurs and female workforce in the FinTech industry. There are less than 30 percent of women in FinTech, and less than 5 percent of them are CEOs.[41] Therefore, decision-making women are largely underrepresented in the FinTech industry, which is why FinTech firms might lack the developmental speed and strength to offer gender-sensitive products to women. It is now an

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[37] Findex (2017). https://globalfindex.worldbank.org/

[38] Chen, S., S. Doerr, J. Frost, L. Gambacorta, and H. S. Shin (2021). "The fintech gender gap." BIS Working Papers No. 931. Bank for International Settlements. https://www.bis.org/publ/work931.pdf

[39] https://www.betterthancash.org/news/closing-the-gender-gap-in-mobile-phone-access-and-use

[40] GFPI (2020). Advancing Women's Digital Financial Inclusion.

[41] https://journal.businesstoday.org/bt-online/2021/fintech-suffers-from-gender-gap

established fact in the financial world that men and women have different financial needs, therefore, they need to be targeted using different instruments and services.[42]

In addition, regardless of the economies' development status, there are fewer women-owned SMEs compared to men-owned SMEs. For example, even in a developed economy like Canada, only 16 percent of SMEs were run by women. Similarly, in the USA, women-owned businesses made up only 19.9 percent of total firms in 2018. The situation is similar in an emerging economy like Malaysia, where only 20 percent of SMEs in were owned by women. The gender gap in SME ownership could be attributed to several factors, including the gender funding gap. IFC has estimated that worldwide, a USD 300 billion gap in financing exists for formal, women-owned small businesses, and more than 70 percent of women-owned small and medium enterprises have inadequate or no access to financial services.[43] While FinTechs could potentially help increase financial inclusion among women by designing gender targeted products, but the low prevalence of women-owned SMEs means that the FinTechs do not have much stimulus to do so. And that has been the case by and large. However, some economies like Hong Kong, China and Colombia, many FinTech lending startups are particularly focusing on extending credit to women to increase their customer base, and in the process improve financial inclusion of women.

6.2 Impact of FinTech Policies on Gender Inclusion

The analysis indicates that there is a dearth of gender focused FinTech policies in the fourteen economies studied. In the event that a FinTech related policy or program had a gender component, it was usually the case that it was too recent and did not have any impact analysis study. Given the constraints, this section provides an overview of the impact some FinTech related policy and programs had on mitigating the gender gap in the FinTech and financial sectors.

Universal digital identification schemes have helped reduce frictions in women's access to finance. Research evidence suggests that one-in-five women cannot access credit due to lack of formal identification.[44] This lack of identification also makes women dependent on male household members to access credit or limits their ability for independent financial decision making. But in recent years the situation has improved due to governments across the world initiating national ID schemes, as well as women's increase in mobile phone adoption, where the unique mobile phone number serves as an ID.

[42] https://www.fincaimpact.com/news-insights/business-loans-for-women-entrepreneurs/
[43] https://www.ifc.org/wps/wcm/connect/news_ext_content/ifc_external_corporate_site/news+and+events/news/bridging-gender-gap
[44] Demirguc-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. 2018. "The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution." World Bank, Washington, DC

Open banking combined with AI & ML have enabled the creation of alternative credit scoring methods, which have enabled underserved customers like women to access financial services. These credit scoring methods are particularly useful in economies where there is a dearth of financial data, which otherwise stymies credit access for women who are less likely to have credit history information compared to men. In addition, these credit scoring methods are objective and do not have gendered biases like traditional credit scoring models. In addition, open banking reduces the barriers to entry for new FinTech startups, which increases the competition and increases the supply of financial service providers. Many new entrants usually target the segments which are currently underserved by the service providers. FinTech startups like Musoni Microfinance in Kenya primarily provides loans to women smallholder farmers; Upwards in India provide personal loans exclusively to women professionals, while Manulife's Eve in The Philippines targeted the women's health insurance section.[45]

FinTech Innovation Facilitators are playing an important role in promoting women-led or women-focused FinTech firms. Most women-led or women-focused FinTechs are start-ups which requires financing, regulatory and managerial guidance. This is where the innovation facilitators are playing a critical role in promoting these FinTechs. For instance, Accenture FinTech Innovation Lab has attracted a gender diverse group of FinTech founders to apply for their 2020 program. In order to continuously support the female founders, Accenture is introducing female CEO-led masterclass sessions, tailored to guide women in FinTech.[46]In addition, the lab is collaborating with Hive Founders, a European hub focused on supporting female entrepreneurs. Similarly, the Women's World Banking's FinTech Innovation Challenge provided a global stage to highlight FinTech innovations serving unbanked and underserved women in order to build their security and prosperity in the face of global inequalities.[47] Facilitating collaboration like these allows female founders to build a community of fellow women in entrepreneurship and expand their personal and professional network.

Digital finance have made women vulnerable to new security related threats, which must be addressed. FinTechs have introduced challenges like financial frauds and cybercrimes, as well as targeted advertisement or products/services with malicious intent, which are can harm women led businesses or individuals. Women's insecure financial situation can also leave them vulnerable to digital lending products with unfavorable terms. Research evidence shows that despite initial optimism that mobile credit would help entrepreneurs to grow their businesses, digital loans mostly are not used for entrepreneurship.[48] Researchers partly blame confusing loan terms and weak transparency, stressing the need for consumer

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[45] https://fintechnews.ch/fintech/the-booming-women-focused-fintech-ecosystem-in-europe/37451/

[46] https://www.fintechconnect.com/startup/articles/tackling-the-fintech-gender-gap-at-accentures-fintech-innovation-lab

[47] https://www.womensworldbanking.org/fintech-innovation-challenge-2021/

[48] Bharadwaj, Prashant, William Jack, and Tavneet Suri. 2019. "Fintech and Household Resilience to Shocks: Evidence from Digital Loans in Kenya." Working Paper 25604, National Bureau of Economic Research, Cambridge, MA.

protection. Similarly, FinTechs with malintent can exploit women by targeting questionable financial products like multi-level marketing (MLMs) at vulnerable women. In addition, if utilized improperly, open baking combined with AI & ML techniques can be used to further exclude women from the financial sector.

Overall, economy-level policies also play a vital role in encouraging female entrepreneurship by addressing issues related to women's economic empowerment. Access to finance is a significant barrier for women-owned SMEs worldwide. IFC has estimated that globally a USD 300 billion gap in financing exists for formal, women-owned small businesses. Cultural norms play a role in determining women's access to employment, income, decision-making and, as a combination of the three, their access to finance. As women entrepreneurs are typically less educated than their male counterparts, they are less likely to have access to financial services. Member economy-level policies, like the economies' MSME policies, often seek to address these problems, considering the drivers of women's economic empowerment, including tackling adverse norms and promoting positive role models, ensuring legal protection and reforming discriminatory laws and regulations, recognizing and redistributing unpaid work and care, building assets, changing business culture and practice, improving public sector practices in employment and procurement. These changes effectively spill over to the FinTech sector and promote adoption of FinTech products and services among women-owned SMEs.

7 REGIONAL CASE STUDIES

7.1 AUSTRALIA

7.1.1 DFS Context and Trends

The FinTech sector is quite advanced in Australia and the population has adopted various FinTech solutions. The digital literacy rate of the Australian population is quite high at 64 percent, suggesting that they could adopt easily to FinTech solutions. Australia has one of the world's most exciting and dynamic FinTech industries, with around 800 FinTech companies in the economy, one of the highest in the world. [49] It ranks 6th in the world and 2nd in Asia-Ocean in the 2021 Global Findex index[50], which ranks economies based on the strength of their FinTech ecosystem. Finally, the FinTech industry grew from AUD 250 million in 2015 to AUD 4 billion in 2021,[51] a 1500 percent increase.

The presence of FinTech enterprises is growing in the digital finance ecosystem. According to the Ernst & Young FinTech Australia Census 2020, around 63 percent of the FinTech enterprises interviewed are older than three years and 30 percent are between two and three years old. In addition, around 78 percent of the FinTechs interviewed are in the post revenue stage, meaning that these companies have started generating sales.[52] It appears that FinTech enterprises are increasing their revenue base with around 39 percent of interviewed enterprises having over 500 paying customers in 2020, and 27 percent in 2019.[53] The Australian FinTech ecosystem contains a wide range of products, including digital payment solutions, online lending, analytics, and fully digital banks or "neobanks".

Despite its growth, the industry is facing some challenges. It faces strong competition from the traditional banks that dominate the financial market. In 2017, around 80 percent of the Australian population had a banking account with one of the "Big Four"[54], the top banks in the economy. The adoption rate of FinTech solutions is low compared to other OECD countries at 58 percent. However, it has been increasing over the last few years.[55] Finally, due

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[49] *Global Fintech rankings 2021: Australia now ranks 6th in the world*. Austrade. (2021, August 16). Retrieved November 2, 2021, from https://www.austrade.gov.au/news/economic-analysis/global-FinTech-rankings-2021-australia-now-ranks-6th-in-the-world.
[50] Ibid
[51] Ibid
[52] EY FinTech Australia Census 2020. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/pdfs/ey-fintech-census-report2020.pdf
[53] Ibid
[54] *Digital Banking and Neobanks*. Mozo. Retrieved November 2, 2021, from https://mozo.com.au/fintech/digital-banking-and-neobanks.
[55] Source: EY, "Global Findex Adoption"

to the pandemic, capital has become less available for FinTech companies, and some companies are aiming to simply survive until capital becomes more accessible.[56]

7.1.2 The FinTech Ecosystem in Australia

7.1.2.1 Main Actors in the FinTech Ecosystem

There are five main actors in the FinTech ecosystem in Australia: i) FinTech Firms; ii) FinTech Collaborators; iii) Regulators; iv) Financiers and v) End-consumers of FinTech solutions. The first are the FinTech firms themselves, which offer the different FinTech solutions in the market. These include companies such as Up and Get Capital. FinTech collaborators may be traditional financial institutions or large technology companies who are looking to incorporate FinTech services into their operations or promote these services. This may be done through collaborations with existing FinTech, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. An example of this is FinTech Australia, a member-driven organization that aims to promote the use and development of FinTech solutions in the market.[57] The third key actor are regulatory authorities that oversee the activities of firms operating in the finance and technology space such as the Australian Prudential Regulation Authority as well as regulators from outside the financial sector such as the Office of the Australian Information Commissioner. The fourth group of actors includes the financiers, which invest in the growth of FinTech firms. This includes, for example, the Venture Capitalist named Early-Stage Venture Capital Limited Partnerships, which has invested AUD 1.17 billion across the whole technology innovation sector, connecting investors with early-stage businesses that include FinTech. The final actor is the end consumer of FinTech services, who could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.1.2.2 FinTech Usage

Even though Australia is still lacking in the adoption of FinTech-based solutions compared to other developed as well as developing economies, the population is adopting them rapidly. The consumer FinTech adoption rate in Australia in 2019 was 58 percent of the population, which is lower compared to 87 percent for China, 72 percent for Mexico and 71 percent for the United Kingdom.[58] These FinTech solutions include money transfer and payments, budgeting and financial planning, savings and investments, borrowing, and insurance.[59] However, the 2019 figures reported above for Australia are the result of rapid

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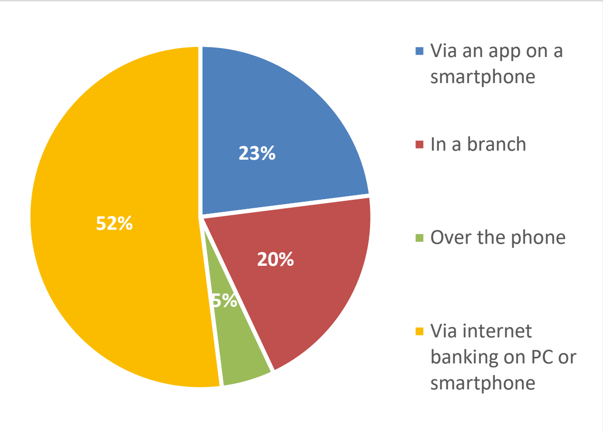
[56] EY FinTech Australia Census 2020. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/pdfs/ey-fintech-census-report2020.pdf
[57] *About Us*. FinTech Australia. (n.d.). Retrieved November 2, 2021, from https://www.FinTechaustralia.org.au/about/.
[58] Source: EY, "Global Findex Adoption" https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf
[59] Ibid.

growth in adoption rates. For instance, the FinTech adoption rate in 2015 was a mere 13 percent of the population.[60] As mentioned earlier, the percentage of FinTechs reporting over 500 paying customers, grew by 12 percent between 2019 (27 percent) and 2020 (39 percent).[61]

A FinTech payment/transaction solution that people seem to be embracing is digital banking. In 2020, around 52 percent of the Australian population banked via internet banking on PC or smartphone and 23 percent via a smartphone, while 20 percent banked in a branch and 5 percent over the phone. In addition, according to the Mozzo survey in 2019, of 1,035 interviewed adults around 25 percent had already switched to a neobank, and around 40 percent of young Australians (18-34 years old) engaged in banking services using a smartphone app.

Figure 2: Banking Habits of Australians in 2020



Source: Mozzo "Neobank Report 2020"

7.1.3 FinTech Regulatory Framework

7.1.3.1 Key Regulatory Actors

The supervision and enforcement of FinTech provisions are entrusted to two authorities, depending on the services the companies provide to their customers:

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[60] Ibid.

[61] Source: EY FinTech Australia Census 2020. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/pdfs/ey-fintech-census-report2020.pdf

Table 5: Key Regulatory Actors in Australia

Regulator	Role
Australian Prudential Regulation Authority (APRA)	The APRA is an independent statutory authority that supervises institutions across banking, insurance, and superannuation and promotes financial stability in Australia. It most importantly issues Authorized Deposit-Taking Institution (ADI) licenses, which allow businesses to offer deposit accounts and hold money on behalf of customers. FinTech businesses in the payment services market that operate with stored-value facilities are obligated to be an ADI.
Australian Securities and Investments Commission (ASIC)	ASIC is Australia's financial markets and financial services regulator. It issues the Australian Financial Services Licence (AFSL), which allows enterprises to conduct a financial service business. Any company that wants to provide any financial services must hold an AFSL. This includes FinTech companies engaged in providing financial services such as crowdsourcing, P2P Lending, insurance, and banking. ASIC's regulatory remit also covers the issuance of Australian Credit Licenses (ACL)s and FinTech companies engaged in providing financial services such as crowdsourcing, P2P Lending, insurance and banking services are required to hold both an AFSL and ACL. ASIC is also tasked to help FinTech startups and companies understand and comply with the regulations they are subject to. FinTech startups can directly request assistance from ASIC's website.
Reserve Bank of Australia (RBA)	The RBA is Australia's central bank and primary payments regulator. The RBA's duty is to contribute to the stability of the currency, full employment, and economic prosperity and welfare of the Australian people. In regards to payments regulation, the RBA exercises its powers to control risk in the financial system, promote the efficiency of the payments system, and promotes competition in the market for payment services.

7.1.3.2 Regulations Related to FinTech Services

Australia has several key regulations specific to FinTech services, or which apply to FinTech companies. These regulations target different key FinTech services such as lending, payment services, crowdfunding and cybersecurity. In addition, the government introduced, in 2020, two key regulations to assist the development of the FinTech ecosystem: Sandbox for testing products, Open Banking to increase competitiveness in the banking sector.

Table 6: Regulations Related to FinTech Services in Australia

Key Area of Regulation	Regulation Name	Details
Lending	National Consumer Credit Protection Act 2009 Australian Credit License (ACL):	FinTechs that are involved in consumer credit activities must hold an Australian credit license.[62] Consumer credit activities include the provision of marketplace lending products and other related services. As P2P Lending FinTech companies are providing loans, they are subject to this regulation.
Payment Services	Payment Systems (Regulation) Act 1998,	FinTech businesses in the payment services market that operate with stored-value facilities are obligated to be an ADI.[63]
Australian Financial Service License	Corporations Act 2001	FinTech businesses that engage in financial services (providing a financial service or releasing financial products) are required to have an Australian financial services license (ASFL) or have an exemption (testing phase).[64]
Open Banking	Consumer Data Right (CDR)	The regulation, introduced in July 2020, aims at enhancing access to consumer data. This regulation allows the consumers the right to easily access their data (through banking apps or websites) and easily share it.[65] For example, a consumer should be able to access his banking data with another prospective bank in hopes of getting better offers. The CDR will lead to better prices and more innovative products and services as it encourages competition between service providers. FinTech companies can benefit from this regulation to offer their services in a more competitive environment.

[62] Global Legal Group. (n.d.). *Fintech laws and regulations: Australia: GLI*. GLI - Global Legal Insights - International legal business solutions. Retrieved November 3, 2021, from https://www.globallegalinsights.com/practice-areas/fintech-laws-and-regulations/australia.
[63] Ibid
[64] Ibid
[65] *What is CDR?* | Consumer Data Right. (n.d.). Retrieved November 3, 2021, from https://www.cdr.gov.au/what-is-cdr.

Crowdfunding	Corporations Amendment (Crowd-sourced Funding) Act 2017	The Act regulates FinTech companies that are specialized in offering crowdfunding solutions to SMEs. The Act allows FinTech companies to raise money via 'crowd sourcing' but they must hold an Australian Financial Services (AFS) license with an authorization to provide a crowd-funding service.[66]
Financial Services Testing	Corporations (FinTech Sandbox Australian Financial Services License Exemption) Regulations 2020 and National Consumer Credit Protection	Under this regulation, FinTech businesses that follow strict eligibility requirements are exempt from holding the AFSL or ACL for a year to test their products.[67] As FinTech businesses are relatively new to the market, this regulation provides adequate time to test their products without going through the burden of regulatory procedures (AFSL and/or ACL).[68]
Cybersecurity	ASIC Guide 255	Sets out the standards and frameworks against which providers of digital advice should test their information security arrangements, and nominated frameworks set out relevant compliance measures, which should be put in place where cloud computing is relied upon.

7.1.4 FinTech & SMEs

7.1.4.1 The SME Sector in Australia

The SME sector in Australia plays a vital role in the economy's GDP via its contribution towards employment and income. It contributed to around 54 percent of Australia's GDP (2018-2019).[69] The MSME and non-employing enterprises make up around 99.8 percent of the businesses in Australia**.** Around 10.7 percent of all enterprises are considered SMEs, i.e., having between 5 and 199 employees. In addition, SMEs are for the most part profitable in Australia. For instance, 50 percent of SMEs have been in business for less than 10 years with 42 percent of them making a profit straight away.[70] A vast majority of SMEs are owned by millennials or generation X, with a considerable number of them being online businesses. For

[66] ASIC. (n.d.). Retrieved November 2, 2021, from https://asic.gov.au/.

[67] Global Legal Group. (n.d.). *Fintech laws and regulations: Australia: GLI*. GLI - Global Legal Insights - International legal business solutions. Retrieved November 3, 2021, from https://www.globallegalinsights.com/practice-areas/fintech-laws-and-regulations/australia.

[68] Ibid

[69] Australian Bureau of Statistics.

[70] Ibid

instance, 56 percent of SMEs are owned by Millennials or the Generation X, and 25 percent of them are online only, in comparison to 10 percent for all businesses.[71]

Table 7: SME Overview

Firm size (employees)	Number	Percent
SME (5-199)	245957	9,31%
Non-employing (0)	1410049	53,40%
Micro (1-4)	699623	26,50%
Small (5-19)	230633	8,73%
Medium (20-199)	50338	1,91%
Large (200+)	3855	0,15%

Source: Australian Bureau of Statistics

Australia's SMEs are finding it more difficult to access finance through the formal banking system. Small businesses in the start-up or expansion phase have particular difficulty accessing finance.[72] New lending to SMEs declined in three consecutive years since 2015 (by 4.9 percent in 2016, 8.1 percent in 2017 and 15.9 percent in 2018) after a period of growth, having risen by 7.4 percent (2013), 7.9 percent (2014) and 6.7 percent (2015).[73] Around 27 percent of businesses surveyed by Certified Practising Accounting Australia (CPA Australia) in 2020, cited having limited access to lending.[74] The funding gap for Australian SME businesses is valued at AUD 91.5 billion by Judo Bank13, a digital bank, representing a 9 percent increase from 2018.[75] Judo Bank also states that three out of four mid-sized businesses (annual turnover of AUD 1 to 10 million) are unsure how much a lender would approve them for.[76] SMEs are also more likely to seek loans of less than AUD 100,000 which are less profitable for traditional lending providers to service.[77] According to the Australian Small Business and

[71] Ibid

[72] *Home*. Australia | Financing SMEs and Entrepreneurs 2020 : An OECD Scoreboard | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/2bf6bc72-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F2bf6bc72-en.

[73] Ibid

[74] CPA (February 2021), "The Role of FinTech in Modernising Businesses" https://www.cpaaustralia.com.au/-/media/project/cpa/corporate/documents/tools-and-resources/business-management/the-role-of-fintech-in-modernishing-businesses.pdf?rev=3d0ef06e88324b60975a8e972af8b33f&download=true

[75] Ibid

[76] Ibid

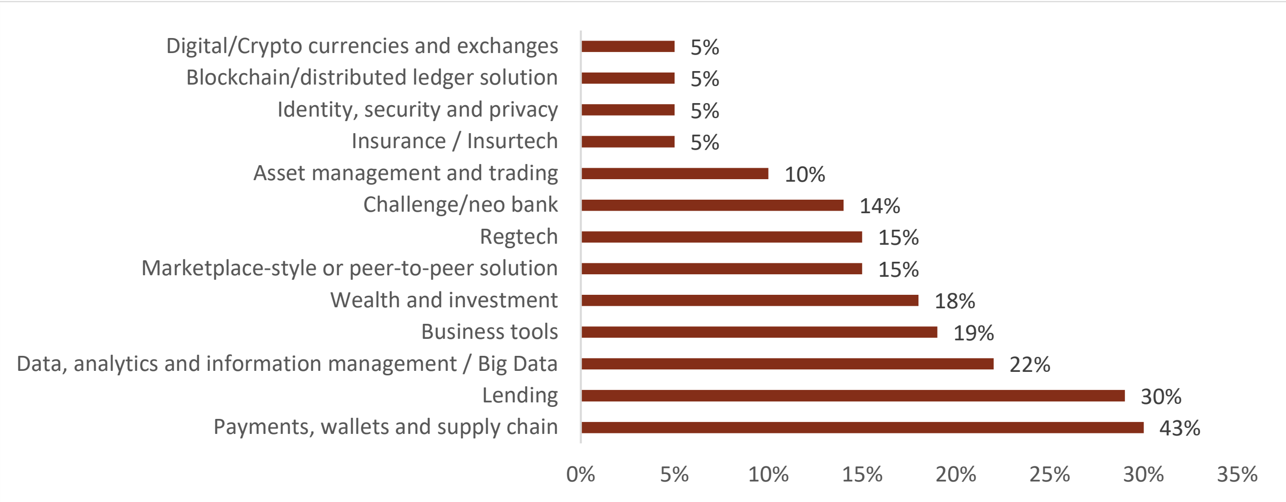
[77] Ibid

Family Enterprise Office (ASBFEO), this reduces traditional lenders willingness to service SME customers[78].

7.1.4.2 FinTech-Based Financial Inclusion of SMEs

The FinTech ecosystem in Australia is very diversified and presents multiple digital solutions to SMEs, most notably payments and lending. Payments, wallets and supply chain (43 percent), lending (30 percent), and data analytics and information management / Big Data (22 percent). In addition, business tools and P2P solutions have respectively 19 percent and 15 percent of the share of the market. Challenge/neobanks that offer innovative banking solutions represent 14 percent of the business market. Around 11 percent of SMEs surveyed by CPA Australia 2020 adopted direct debits and 10 percent payments acceptance from FinTech enterprises. While 7 percent have adopted currency transfers, 6 percent use "Buy Now Pay Later", 6 percent use digital businesses banking, 5 percent FinTech lending and 4 percent virtual corporate cards.

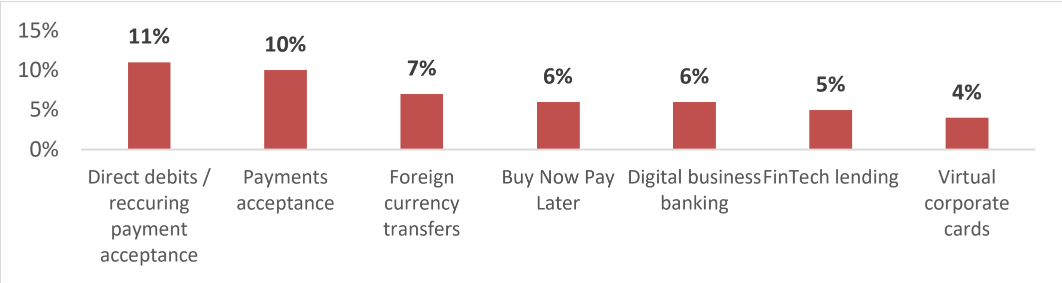
Figure 3: Types of FinTech Enterprises in the Australian Ecosystem



Source: EY FinTech Australia Census 2021

78 Ibid

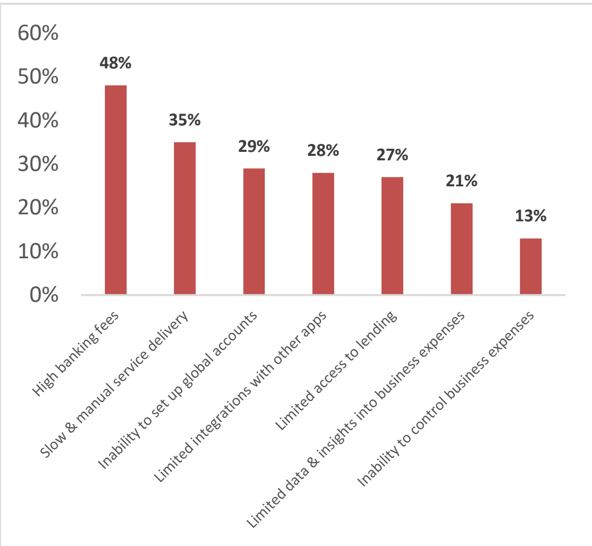
Figure 4: Adoption of FinTech by Type



Source: CPA Australia Survey 2020

FinTech solutions can mitigate some of the challenges SMEs face, including high fees and slow and manual delivery of banking services. Around 48 percent of SMEs declared that high banking fees and 35 percent slow and manual service delivery are challenges in the banking system.[79] Other important challenges for SMEs include the inability to set global accounts (29 percent), limited integration with other apps (28 percent) and limited access to finance (27 percent). The World Bank reports that Australian businesses face 13 percent higher costs for sending money overseas than businesses in the UK using traditional means, and up to 40 percent higher than in the USA. Nevertheless, FinTech services can offer much lower exchange fee rates with multi-currency capabilities and same-day transactions as opposed to 2-3 days for traditional banks.

Figure 5: Business Banking Pain Points



Source: CPA Australia Survey 2020

Table 8: Transaction Characteristics by Institution

Transfer	Traditional	FinTech
Foreign currency exchange fee on major currencies	3-5 percent	0.15-0.6 percent
International transfer fee per transaction	AUD 10 – AUD 20 using DWIFT network	AUD 0 – AUD 20
Speed of international transfers	2 – 3 days	Same day
Multi-currency capability	Foreign currency accounts, only based in Australia	Global account, based oversees

Source: CPA Australia Survey 2020

[79] CPA (February 2021), "The Role of FinTech in Modernising Businesses" https://www.cpaaustralia.com.au/-/media/project/cpa/corporate/documents/tools-and-resources/business-management/the-role-of-fintech-in-modernishing-businesses.pdf?rev=3d0ef06e88324b60975a8e972af8b33f&download=true

The FinTech sector presents more benefits than the traditional sector in lending to SMEs. The funding speed from FinTech businesses is much faster than traditional banks, taking 1 to 3 days for loans less than USD 100,000. In addition, FinTech lending businesses don't require collateral that many SME start-ups lack; however, the fees and rates are higher than traditional banks. FinTechs have the capabilities to offer these advanced features through progressive APIs with rapid application processes, greater transparency, faster turnaround times on loans and integrated platforms to manage SME finances, debts and bills easily.[80]

[80] CPA (February 2021), "The Role of FinTech in Modernising Businesses" https://www.cpaaustralia.com.au/-/media/project/cpa/corporate/documents/tools-and-resources/business-management/the-role-of-fintech-in-modernishing-businesses.pdf?rev=3d0ef06e88324b60975a8e972af8b33f&download=true

Table 9: Loan Characteristic by Institution

Categories	Traditional FIs	FinTech
Funding speed	1-3 months	1-3 days for loans less AUD 100,000
Information requirements	Financial statements	API-based connections to 3rd party data such as accounting software or eCommerce stores
Security required	Typically requires business assets / property as collateral, and personal guarantees from business owners	May not require property as collateral, but may require personal guarantees from business owners
Loan terms and the amount offered	Loan terms up to 30 years available. Loan amounts range from AUD 20,000 and above	Loan terms from 3 months to 5 years; Loan amounts range from AUD 5,000 to AUD 1,000,000
Fees and rates	Variable rates can start from 4 percent	Variable rates can start from 6 percent

Source: CPA Australia Survey 2020

However, there is a certain degree of apprehension among SMEs in Australia in using FinTech solutions, mainly arising from cybersecurity concerns. Around 70 percent of SMEs in 2020 did not use any FinTech solutions, while 16 percent used only one and 14 percent used at least two.[81] In addition, 40 percent of SME enterprises are unaware of the existence of available FinTech solutions.[82] Furthermore, the massive growth in the number and variation of FinTech products is making it more difficult for SMEs to make informed decisions about which products and lenders will suit their purposes and circumstances. SMEs are unaware of the benefits of borrowing from a FinTech lender or the costs of serving loans, as well as the associated risks. The main barriers to adopting FinTech solutions for SMEs are cybersecurity/data privacy concerns and lack of qualified employees. FinTechs are subject to regulations on cybersecurity, data privacy, anti-money laundering, consumer protection and security on the funds they hold. While they are not subject to all the same regulatory oversight as traditional financial institutions, many FinTechs voluntarily abide by industry standards on cybersecurity.

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[81] CPA (February 2021), "The Role of FinTech in Modernising Businesses" https://www.cpaaustralia.com.au/-/media/project/cpa/corporate/documents/tools-and-resources/business-management/the-role-of-fintech-in-modernishing-businesses.pdf?rev=3d0ef06e88324b60975a8e972af8b33f&download=true

[82] Ibid

Figure 6: FinTech Adoption by SMEs

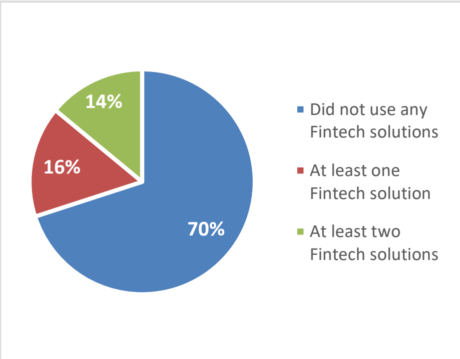
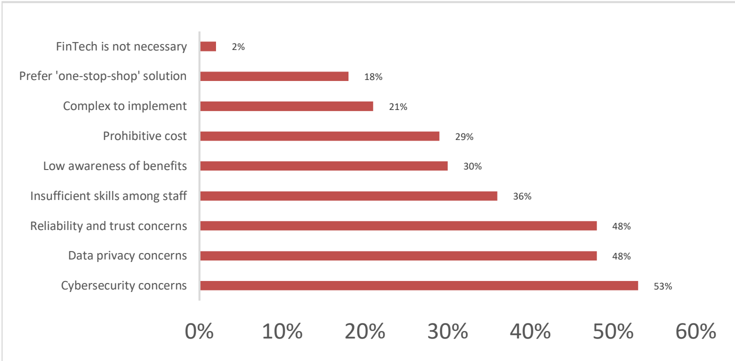


Figure 7: Barriers to Adopting FinTech Based Solutions



Source: CPA Australia Survey 2020

7.1.4.3 Regulations Affecting the SME Sector and FinTech Services

In Australia, there are a few regulations that both the SME and the FinTech sector can benefit from. FinTech firms in Australia are embracing open banking and SMEs are in an excellent position to benefit because they are willing to share their banking data to secure the lending and capital they need[83]. In addition, FinTechs specializing in crowd funding can benefit from Regulatory Guides 261 Crowd-sourced funding. It guides and assists companies to raise funds through crowed-sourced equity funding to reduce regulatory barriers to investing in small and startup businesses[84].

7.1.5 Gender-based Impact of FinTech Financial Inclusion

Men and women are highly involved in the financial services offered in the economy and there are no significant differences between them according to the Global Findex Database 2017. Around 99.8 percent of men and 99.2 percent of women over the age of 15 own an account in a financial institution. In addition, 94 percent of men and 95 percent of women have made or have received a digital payment in the last year and around 90 percent of the population owns a debit card. Finally, the share of the Australian population that borrows is significantly high--around 20.5 percent of the population has borrowed from a financial institution.

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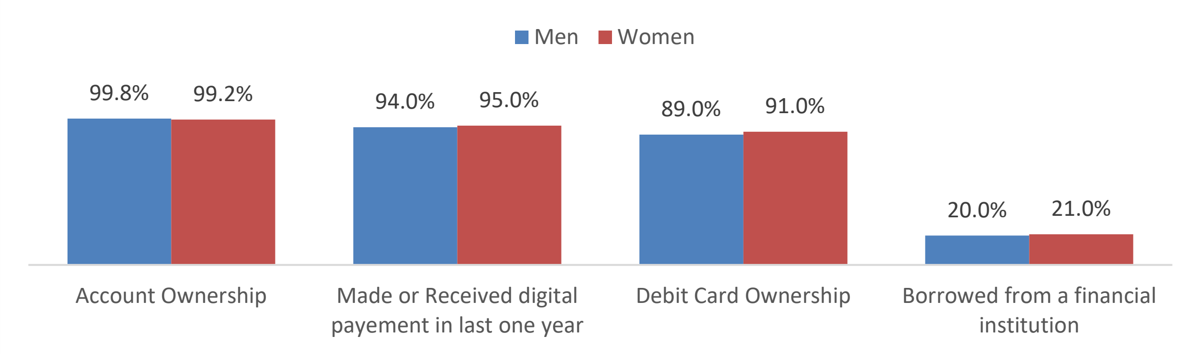
[83] CPA (February 2021), "The Role of FinTech in Modernising Businesses" https://www.cpaaustralia.com.au/-/media/project/cpa/corporate/documents/tools-and-resources/business-management/the-role-of-fintech-in-modernishing-businesses.pdf?rev=3d0ef06e88324b60975a8e972af8b33f&download=true

[84] *RG 261 crowd-sourced funding: Guide for Companies*. ASIC. (n.d.). Retrieved November 2, 2021, from https://asic.gov.au/regulatory-resources/find-a-document/regulatory-guides/rg-261-crowd-sourced-funding-guide-for-companies/.

Figure 8: Gender Split and Usage of Financial Services



Source: Global Findex Database, 2017

A low female financial literacy rate compared to men could be driving the low participation of female workforce in FinTech. While men and women enjoy similar involvement in the financial digital services in the economy, it is not reflected in the workforce. Only 29 percent of the labor force in the FinTech industries interviewed by EY are women[85]. The financial literacy rate of women is around 56 percent while that of men is 72 percent[86]. Overall, around 70 percent of men participate in the labor force in contrast to 61 percent of women[87]. In general, only 35 percent of micro and small enterprises (1-19) are owned or led by women[88].

7.1.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Australia

Neobanks are reaching more customers by offering competitive rates and lower fees in comparison to the "Big Four". Neobanks are deposit taking institutions. However, as opposed to traditional banks, they function exclusively online (without any branch network), and their services are fully contained within a mobile app**.** Neobanks are operated with both a digital front end and back end. To compete with the "Big Four" and other traditional banks, they offer more competitive rates and lower fees, focus more on developing their mobile applications to a more fast and diversified service, and they can show the current balance without any pending payments[89]. However, some challenges remain, such as the preference of some customers for in-branch services, limited years of experience in the sector, and

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[85] EY FinTech Australia Census 2020. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/pdfs/ey-fintech-census-report2020.pdf

[86]S&P Global FinLit Survey "https://gflec.org/initiatives/sp-global-finlit-survey/"

[87]*2019 small business counts - ASBFEO*. (n.d.). Retrieved November 2, 2021, from https://www.asbfeo.gov.au/sites/default/files/documents/ASBFEO-small-business-counts2019.pdf.

[88]Ibid

[89] Tom Watson · Last updated Tuesday, Tom Watson Finance journalist Tom Watson is a financial journalist at Mozo and co-host of the Finance Burrito podcast, & journalist, F. (n.d.). *Digital Banking and Neobanks*. Mozo. Retrieved November 2, 2021, from https://mozo.com.au/fintech/digital-banking-and-neobanks.

smaller range of financial product offerings[90]. To qualify as a neobank, the latter must apply for two licenses: an Australian Deposit-Taking Institution (ADI) license, which is issued by the Australian Prudential Regulation Authority (APRA), and an Australian Financial Services License (AFSL) issued by the Australian Securities and Investments Commission (ASIC).[91]

7.1.7 The Impact of COVID-19 on FinTech Services

The Covid pandemic led to a lack of capital for FinTech companies, however, it also presented some opportunities. 72 percent of firms surveyed by EY declared that COVID-19 negatively impacted capital raising versus 13 percent that reported positive impacts, while the rest were not impacted[92]. Only 57 percent of FinTech companies met or exceeded their capital requirements for the last 12 months[93]. This could be due to different factors such as the decrease of venture capital backed FinTech investments by 66 percent between Q4 2019 and Q1 2020[94]. During the pandemic, consumers were searching for online solutions to their daily routines, with FinTech leading the way. Since the lockdown, around 50 percent of FinTech industries considerations were accelerating offering/product releases, 35 percent were diversifying the revenue streams and 25 percent acquiring another firm.[95]

7.1.8 Emerging FinTech Companies in Australia

It's no secret that technology is moving at a faster rate than ever. The demand for existing and emerging companies to innovate and create the products and solutions for the future is at an all-time high. Booming in recent years, the financial technology, or FinTech industry, has seen companies seek to solve a plethora of problems that we face in today's society in attempts to offer unique financial solutions that are more efficient and effective than ever before. With so many companies in the FinTech space, we've put together a list of exciting companies to keep an eye on in coming years. Each doing amazing things in their own right.

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[90] Ibid

[91] Tom Watson · Last updated Wednesday, Tom Watson Finance journalist Tom Watson is a financial journalist at Mozo and co-host of the Finance Burrito podcast, & journalist, F. (n.d.). *Neobanks and digital banks licenses explained*. Mozo. Retrieved November 2, 2021, from https://mozo.com.au/neobanks/guides/neobanks-and-digital-banks-licences-explained.

[92] Ibid

[93] Ibid

[94] Ibid

[95] EY FinTech Australia Census 2020. https://assets.ey.com/content/dam/ey-sites/ey-com/en_au/pdfs/ey-fintech-census-report2020.pdf

Table 10: Emerging FinTech Companies in Australia

Name of Company	Services
Get Capital	Australian FinTech specializing in SME lending
Moula	Loan service company that helps SMEs borrow money to grow their business
Octet	Innovative financial technology business specializing in supply chain finance PAAS and financing SMEs within the Asia Pacific region
Assembly	Assembly's payment APIs help businesses manage multiple payment workflows and move funds, so they can pay and get paid without delay
Up	Neobank launched in 2018, offering a savings account and a transaction account
Volt	Neobank granted an ADI in 2019, offering a savings account option
86400	Neobank launched in 2019, offering the following products: Own Home Loan, Own Home Loan (Fixed), Pay Account and Save account
Qpay	Neobank launched in 2015, a student payment and budgeting app

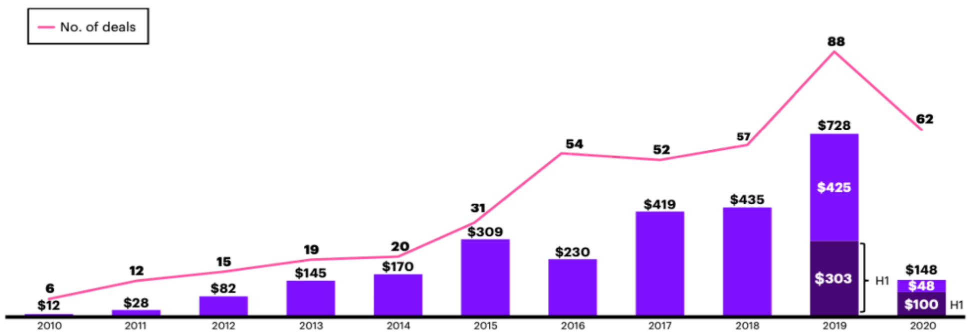
7.2 CANADA

7.2.1 DFS Context and Trends

The resilience of the current banking structures may be slowing the uptake of digital financial services in Canada. Canada was one of the few economies to come out of the 2008 recession relatively unscathed. It was the only G-7 economy to avoid a financial crisis, as none of its financial institutions failed during this time. The World Economic Forum (WEF) Banking Stability ranking placed Canada at the top for the six years following the Global Recession[96]. However, the banking sector in Canada is dominated by six large banks, popularly known as "Big Six", who control 90 percent of the total assets among federally regulated DTIs. Strict financial regulation prevents easy entry into the sector, with the OECD Production Market Regulation (PMR) Indicator, which measures regulatory barriers to entry and competition, ranking Canada 34th out of 36 OECD countries[97].

In spite of this, the FinTech sector in Canada has grown significantly in recent years. FinTechs in Canada have been able to attract a significant amount of investment over the years. Total pre-IPO equity investment in Canadian FinTech companies went from USD 12 million in 2010 to USD 728 million by 2019. In the same time frame, the number of FinTech deals completed went from only 6 to 88.[98]. The figure below outlines the total value of investment and number of FinTech deals from 2010 to 2020.

Figure 9: Total Pre-IPO Equity Investment Volume and Dollar Value of Canadian FinTech Companies from 2010-2020 (in USD M)



Source: Accenture FinTech Report 2021

[96] Haltom, Renee (2013). *Why Was Canada Exempt from the Financial Crisis?*. Econ Focus – Fourth Quarter. Retrieved from https://www.richmondfed.org/~/media/richmondfedorg/publications/research/econ_focus/2013/q4/pdf/feature2.pdf

[97] Sharpe, Andrew (2021). *The World Bank Doing Business Index for Canada: An Assessment.* Center for the Study of Living Standards. Retrieved from http://www.csls.ca/reports/csls2021-02.pdf

[98] Accenture 2021 Canadian FinTech report. (2021). Retrieved October 18, 2021, from https://www.accenture.com/_acnmedia/PDF-149/Accenture-FinTech-report-2020.pdf

7.2.2 The FinTech Ecosystem in Canada

7.2.2.1 Main Actors in the FinTech Ecosystem

There are 5 main actors in the FinTech ecosystem in Canada: i) FinTech Firms; ii) FinTech Collaborators; iii) Regulatory Authorities; iv) FinTech Financiers; and v) FinTech Consumers. The first are the FinTech firms themselves, which leverage innovative technologies like blockchain and artificial intelligence to provide financial services. FinTech collaborators may be traditional financial institutions or large technology companies looking to incorporate FinTech services into their operations. This may be done through collaboration with existing FinTech, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. For example, Manulife, a large Canadian insurance company, is developing its digital platform in collaboration with Kasisto, an artificial intelligence FinTech.[99] Third are the regulatory authorities that oversee the activities of firms operating in the finance and technology space, such as the Office of the Superintendent of Financial Institutions (OSFI), as well as regulators that apply to all forms of businesses such as consumer protection authorities and employee rights regulators. The fourth group comprises the financiers investing in FinTech firms. This includes venture capital, angel investors, incubator funds, as well as financial support programs from the government. The final actor is the end consumer of FinTech services, who could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.2.2.2 FinTech Usage

FinTech usage in Canada is lagging compared to other similar jurisdictions. Canadians have not been as keen to embrace these new technologies as was hoped. According to the 2019 EY Global FinTech Adoption Report[100], Canada has a FinTech adoption rate[101] of 50 percent, compared to 87 percent in India and China, 82 percent in Russia, 71 percent in the UK, and a worldwide average of 64 percent. Except for money transfers and payments, Canada also ranks below the average adoption rate in all FinTech service categories. The figure below shows the FinTech adoption rates for 27 markets surveyed in the EY report.

Lack of awareness and lack of consumer trust are the key issues inhibiting the adoption of FinTechs. The same EY report found that the main reason for consumers going with an incumbent financial institution was a lack of awareness. A key stakeholder with knowledge of the SME landscape stated that they suspect that most SMEs in Canada have probably never

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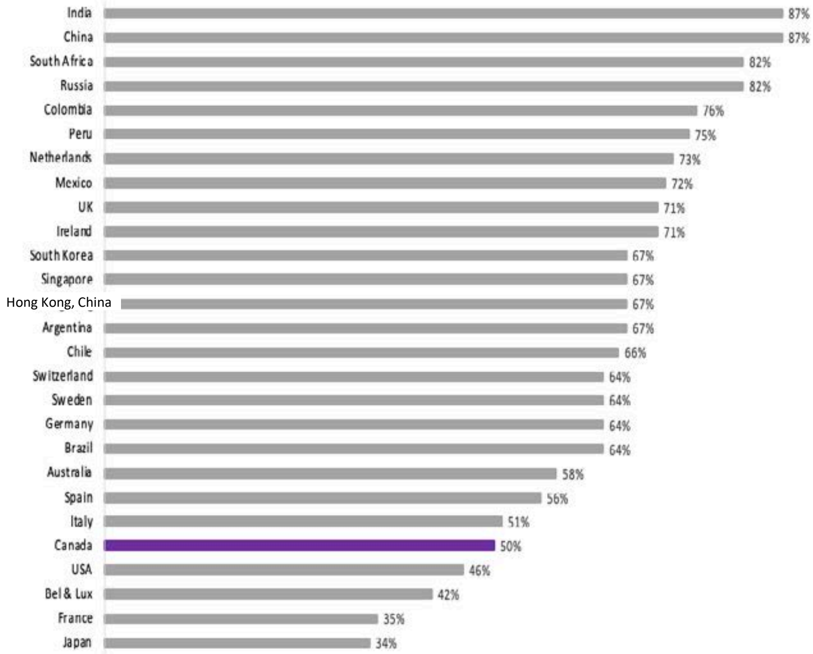
[99] Kirkwood, Isabelle (2019). *Manulife Another Canadian Bank Using Kasisto's AI Tech.* Betakit – Canada. Retrieved from https://betakit.com/manulife-another-canadian-bank-using-kasistos-ai-tech/

[100] *Global Findex Adoption Index* (2019). Ernst & Young. Retrieved from https://www.ey.com/en_gl/ey-global-FinTech-adoption-index

[101] The adoption rate is the number of FinTech adopters as a percentage of the digitally active population, where a FinTech adopter is someone who has used two or more major FinTech services in the last six months

heard of a FinTech. FinTech firms must also cross the trust hurdle associated with emerging technologies. The EY report also found that 67 percent of surveyed consumers were worried about the security of their data when dealing with companies online and only 28 percent were comfortable with their bank sharing their data with other financial institutions to get better rates.[102]

Figure 10: FinTech Adoption Rates for 27 Economies



Source: Adapted from 2019 EY Fintech Report

7.2.3 FinTech Regulatory Framework

7.2.3.1 Key Regulatory Actors

Financial regulations responsibilities are split between the federal agencies and the provincial and territorial agencies. There are no regulatory bodies specifically designed to oversee FinTech in Canada. Instead, FinTech falls under the jurisdiction of either federal or regional authorities or both, depending on the services provided. The table below shows the key regulatory actors and their functions.

[102] Zochodne, Geoff (2019). *Canadian FinTech adoption rate hits 50 percent, but still trails global peers: EY.* Financial Post. Retrieved from https://financialpost.com/technology/canadian-FinTech-adoption-rate-hits-50-per-cent-but-still-trails-global-peers-ey

Table 11: Key Regulators for FinTech Services in Canada

Regulator	Description
Department of Finance	Responsible for the development and implementation of financial sector policy. Supports the development of FinTech related policies through vehicles like the Advisory Committee on Open Banking. Also issues licenses for Federally Regulated Financial Institutions (FRFIs) and Federally Regulated Insurance Companies (FIC)
the Office of the Superintendent of Financial Institutions (OSFI)	Responsible for the day-to-day supervision of the financial services sector.[103] Oversees all FRFIs and private pension plans to ensure compliance with relevant regulation. OSFI also regulates the activities of FICs.
Bank of Canada	Under the recently passed Retail Payments Activities Act, the Bank of Canada will be the regulatory body for payment FinTechs. Payment FinTech firms will have to register with the Bank and submit required documents such as annual reports and risk management frameworks.[104] However, the policy is not yet in effect as it relies on certain regulations that have not yet been made law.
Financial Consumer Agency of Canada (FCAC)	Responsible for enforcing consumer protection legislation for financial entities
Financial Transactions and Reports Analysis Centre of Canada (FINTRAC)	Enforces the anti-money laundering legislation in Canada for all reporting entities. FinTechs qualify as reporting entities based on the services they provide. For example, crypto currency dealers would be categorized as money service businesses (MSB), which would make them a reporting entity, and would require registration as money service businesses with FINTRAC.[105]
Canadian Securities Administrators (CSA)	Represents the regional securities regulators such as the Ontario Securities Commission and the British Columbia Securities Commission, among others. Operates on a passport system so that securities regulations in one province are applicable in other provinces. However, Ontario does not participate in this passport system.[106] Regional securities have deemed crypto currency and P2P

[103] Pundit et al. (n.d). *FinTech in Canada: overview.* Thomson Reuters Practical Law. Retrieved from https://uk.practicallaw.thomsonreuters.com/w-016-2687?transitionType=Default&contextData=(sc.Default)&firstPage=true

[104] Bradshaw, James (2021). *Bank of Canada to become new regulator of fintech companies doing payments processing.* The Globe and Mail: Canada. Retrieved from https://www.theglobeandmail.com/business/article-bank-of-canada-to-become-new-regulator-of-fintech-companies-doing/

[105] Forgione, F & Pallota, A. (2021). *Canada: Fintech Laws and Regulations 2021.* International Comparative Legal Guides. Retrieved from https://iclg.com/practice-areas/fintech-laws-and-regulations/canada

[106] *OSC rejects 'passport' system of securities regulation.* (2007). Canadian Broadcasting Corporation. Retrieved from https://www.cbc.ca/news/business/osc-rejects-passport-system-of-securities-regulation-1.672911

	lending as securities and require registration with the appropriate regional securities commission.

7.2.3.2 Regulations Related to FinTech Services

Depending on the service provided, FinTech firms may fall under the jurisdiction of various existing financial services laws. The table below lays out the various laws that apply to FinTech firms in Canada.

Table 12: Key FinTech Regulations in Canada

Key Area of Regulation	Regulation Name	Details
Virtual Banking	Bank of Canada Act	The Bank Act outlines the operational requirements for financial institutions in Canada. Proposed 2018 Amendments to the Bank Act would allow banks greater liberty in entering third party partnerships with FinTech firms or providing FinTech services themselves.
PayTech	Canadian Payments Act	Sets out the legal framework for Payments Canada, the clearing and settlements platforms for all online payment transactions in the economy. Payments Canada has requirements for operating on its infrastructure, which Payment FinTech will need to comply with to function efficiently.
PayTech	Payment Clearing and Settlement Act	Provides regulatory oversight powers to the Bank of Canada over the payments' infrastructure in Canada and its users
InsureTech	Insurance Companies Act	Primary legislation for FICs in Canada that outline requirements for insurance companies such as management practices and capital requirements.[107] Currently, insurance technology firms are not classified as FICs and so are not subject to the Insurance Companies Act. In fact, it is not clear which regulation applies to insurance technology firms.[108]
Cryptocurrency, P2P Lending	Regional Securities Acts and CSA Notes e.g., Ontario Securities Act, Staff Notice 46-307	The CSA issues special notices to provide guidance on the applicability of regional securities laws to cryptocurrency and P2P lending, such as SN 46-307 on the applicability of securities laws to cryptocurrency offerings. Ontario Securities Commission also issued Staff Notice 33-747 to provide guidance on P2P lending regulation.[109]
General	Personal Information Protection and Electronic Documents Act (PIPEDA)	Regulates business activities regarding customer's personal data including requirements to seek consent for collection and use of consumer data.

[107] *Do tradition and innovation mix? Benefits and risks for consumers of peer-to-peer insurance.* (2018). Option Consommateurs. Retrieved from https://option-consommateurs.org/wp-content/uploads/2019/05/option-consommateurs-810804-assurance-pair-a-pair-rapportenglish.pdf

[108] Gambrill, David (2020). *Time to regulate insurtechs.* Canadian Underwriter. Retrieved from https://www.canadianunderwriter.ca/features/time-to-regulate-insurtechs/

[109] *Annual Summary Report for Dealers, Advisers and Investment Fund Managers* (2016). Ontario Securities Commission. Retrieved from https://www.osc.ca/sites/default/files/pdfs/irps/20160721_sn_33-747_annual-rpt-dealers-advisers.pdf

General	Proceeds of Crime (Money Laundering) and Terrorist Financing Act (PCMLTFA)	Sets out Anti-Money Laundering/Counter-Terrorism Financing (AML/CFT) protocols for businesses to follow

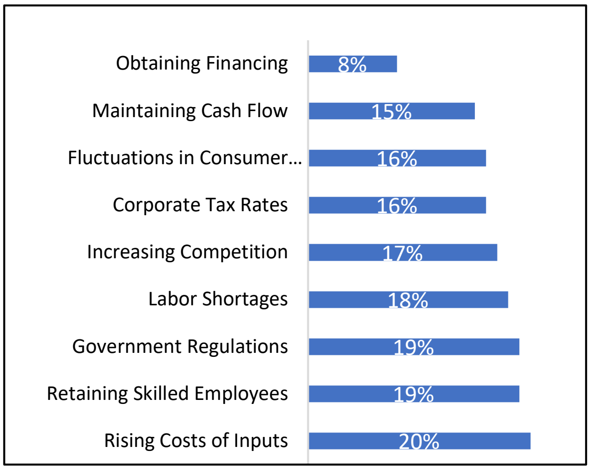
Although there are currently no FinTech-specific regulations in Canada, new regulations are being developed to address issues related to FinTech. For instance, regulation restricting the consumer's right to share financial data has led to riskier methods of accessing data such as screenscraping, which requires customers to give the FinTech firm their bank account credentials along with read and write access.[110] In that regard, the Ministry of Finance has established an advisory committee to review the implementation of open banking[111] in Canada. This will provide access to the financial data required for full implementation of artificial intelligence FinTech solutions. The Retail Payment Activities Act (RPAA) has also recently been passed into law, though it is not yet in effect due to supplemental regulations required. The RPAA will provide a more comprehensive framework for regulating payment service providers that accounts for the nuances in FinTech operations.[112]

7.2.4 FinTech & SMEs

7.2.4.1 The SME Sector in Canada

SMEs are a significant section of the Canadian economy. SMEs make up the vast majority of businesses in Canada. Over 99 percent of businesses in Canada are small or medium enterprises. SMEs are also the largest employers in Canada, employing over 88 percent of private sector employees in the economy. These firms are a significant contributor to Canadian GDP, averaging about

Figure 11: SMEs Key Issues



[110] Accenture 2021 Canadian FinTech report. (2021). Retrieved October 18, 2021, from https://www.accenture.com/_acnmedia/PDF-149/Accenture-FinTech-report-2020.pdf

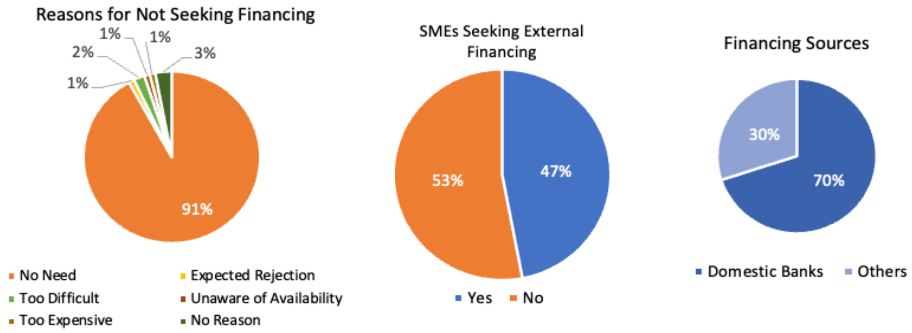
[111] Open banking is a framework where consumers and businesses can authorize non-traditional financial institutions to access their financial transaction data from traditional financial institutions through application program interfaces (APIs).

[112] Molino, Tracy & Walters, Noah (2021) *The Retail Payment Activities Act: A step towards regulating payments service providers*. Dentons Canada LLP. Retrieved from https://www.dentons.com/en/insights/articles/2021/may/17/the-retail-payment-activities-act

54 percent of GDP from 2012 to 2016.[113] As such, the success of SMEs is crucial for economic stability and prosperity in Canada.

According to a survey by Industry Canada[114], access to financing does not appear to be a key concern for SMEs. 47 percent of Canadian SMEs sought financing in 2017, with 89 percent of loan applications to financial institutions approved. Domestic banks financed 70 percent of these requests. Among SMEs that did not seek financing, 85 percent said that they had no need for it and only 4 percent said that they did not apply because they thought they would be rejected, while 5 percent found financing too expensive. The same report finds that financing is not one of the key issues plaguing SMEs in Canada. Canadian SMEs are most concerned with rising operating costs, fluctuations in demand for products, increasing competition, and recruiting and retaining skilled workers.

Figure 12: Breakdown of SME Financing in Canada



Source: Data from Survey on Financing and Growth of Small and Medium Enterprises (2017), Industry Canada

7.2.4.2 FinTech-Based Financial Inclusion of SMEs

Canadian FinTech firms are developing new approaches to solve the financing issues of micro firms. A Canadian Federation of Independent Business (CFIB) Report[115] found that micro businesses (with fewer than 5 employees) are nearly six times more likely to be rejected for a loan than mid-size firms. These firms make up 55 percent of all SMEs and will typically request small loans, which are not very profitable for larger banks. Thinking Capital, a lending FinTech, recently acquired another FinTech, Ario, to leverage its API integration technology

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[113] *Key Small Business Statistics - 2020* (n.d). Innovation, Science and Economic Development Canada. Retrieved from https://www.ic.gc.ca/eic/site/061.nsf/eng/h_03126.html#how-SME

[114] *Focus: Small and Medium Sized Enterprises: Lending and More* (n.d). Canadian Bankers Association. Retrieved from https://cba.ca/small-and-medium-sized-enterprises

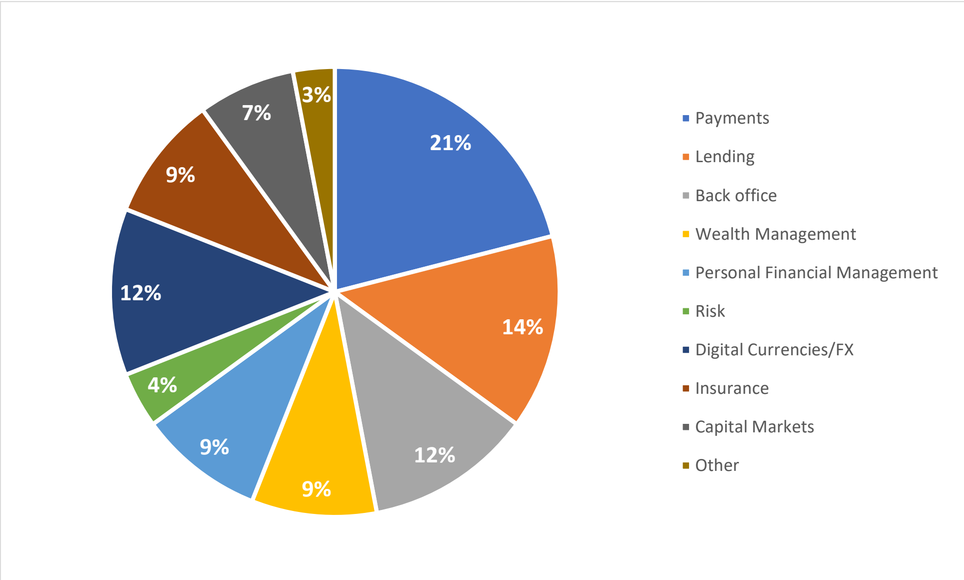
[115] *It's hard for small businesses to get a loan from the bank* (2016). Company Capital. Retrieved from https://www.companycapital.ca/2016/10/hard-small-businesses-get-loan-bank/

for connecting non-bank brands with SME users with small business lenders.[116] Furthermore, ClearCo, a FinTech unicorn, allows SMEs to raise capital for their businesses without giving up equity to venture capital while collecting repayments only based on revenue collected.

FinTech firms have also developed solutions to SME financial management and payment problems. According to the Accenture 2021 Canadian FinTech Report, 21 percent of all FinTech firms in Canada are providing payment services, making it the largest sector in the FinTech industry. With SMEs accounting for 41 percent of export value in Canada[117], these firms have served to streamline both domestic and international payments. Additionally, FinTech firms have pioneered innovative accounting and bookkeeping platforms to help SMEs manage their accounts. FinTech firms such as Wave and Bench simplify SME financial management by automating accounting processes with artificial intelligence.

Overall, the most common FinTech solutions offered to SMEs are payments, lending and back office. Around 21 percent of FinTech companies offer payments services followed by 14 percent for lending and 12 percent for back office. In addition, around 9 percent of FinTech companies are specialized in Wealth Management, 9 percent in personal financial management, 12 percent Digital currency/FX and 9 percent in insurance.

Figure 13: FinTech Sector Distribution



Source: Accenture FinTech Report 2021

[116] Accenture 2021 Canadian FinTech report. (2021). Retrieved October 18, 2021, from https://www.accenture.com/_acnmedia/PDF-149/Accenture-FinTech-report-2020.pdf

[117] *10 things you (probably) didn't know about Canadian SMEs* (n.d). Business Development Bank of Canada. Retrieved from https://www.bdc.ca/en/articles-tools/business-strategy-planning/manage-business/10-things-didnt-know-canadian-sme

7.2.4.3 Regulations Affecting the SME Sector and FinTech Services

Loan security requirements may prevent FinTech lending firms from taking advantage of SME loan guarantee regulations. The Canada Small Business Financing (CBSF) Act,[118] which creates a government loan guarantee program, does not contain any FinTech lenders on the list of approved financial institutions, with only chartered banks, trusts, and credit unions. Although there are no explicit criteria for deciding on participating financial institutions, it is likely that the FinTech firms are excluded because of their unconventional lending practices. For instance, the act only allows a credit check or a credit reference to determine creditworthiness of borrowers.

7.2.5 Gender-based Impact of FinTech Financial Inclusion

Although financial services usage is similar across gender, women lag in financial literacy and workforce participation. According to the World Bank Global Findex Database[119], 100 percent of both men and women in Canada have bank accounts. Ninety-nine percent of men made or received digital payments in 2017, compared to 97 percent of women. There were similarly low levels of borrowing from financial institutions, with 27 percent of men borrowing from a financial institution, compared to 26 percent of women. However, only 16 percent of SMEs in Canada are run by women. There is also a 7 percent difference in labor force participation between men and women in Canada. Twenty-two percent of men answered five key financial literacy questions correctly, compared to 15 percent of women. Men were also more likely to self-report as financially knowledgeable (43 percent) compared to women (31 percent).[120]

FinTech has not been an exception to this disparity. There has been the expectation that FinTech's innovative financing solutions would close any gender gaps in access to finance; however, gender disparities in FinTech usage remain. A working paper from the Bank of International Settlements[121] surveyed 28 economies, including Canada, and found that 29 percent of men use FinTech products and services compared to 21 percent of women. The figure below shows the gender gap for each economy studied. There are also large gender disparities within FinTech staffing. The FinTech Growth Syndicate Report[122] found that only 9 percent of CEOs in Canadian FinTech firms are women. It seems that the documented large gender gap from the finance and tech industries has also translated into the FinTech industry.

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[118] *Canadian Small Business Financing Program Guidelines* (2021). Innovation, Science and Economic Development Canada Retrieved from https://www.ic.gc.ca/eic/site/csbfp-pfpec.nsf/eng/h_la03133.html#s1

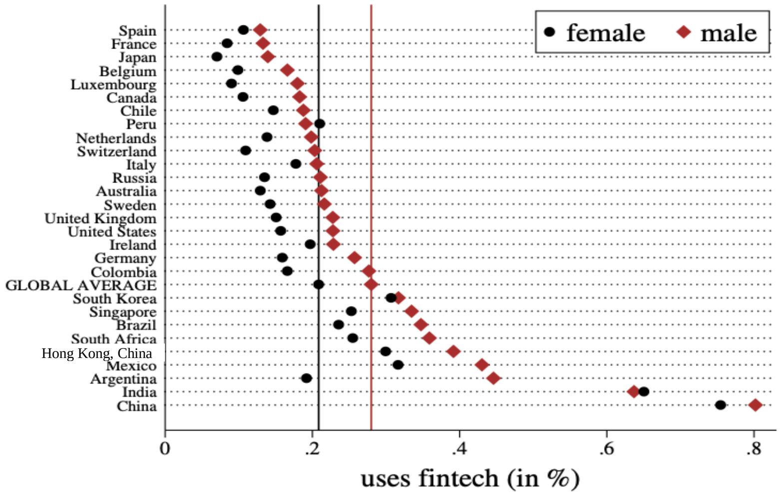
[119] Demirgüç-Kunt, Asli, Leora Klapper, Dorothe Singer, Saniya Ansar, and Jake Hess. (2018). *The Global Findex Database 2017: Measuring Financial Inclusion and the FinTech Revolution*. World Bank: Washington, DC.

[120] Drolet, M. (2016). Gender differences in the financial knowledge of Canadians.

[121] Shin, H. S., Gambacorta, L., Frost, J., Doerr, S., & Chen, S. (2021). The FinTech gender gap. *Available at SSRN 3799864*.

[122] Payments Canada (2020, May 7). *The 2019 Payments Canada SUMMIT – Innovating the way: Women in FinTech* [Video]. YouTube. https://www.youtube.com/watch?v=0jZ1y4lE64w&t=739s

Figure 14: FinTech Gender Gap



Source: Shin, H. S., Gambacorta, L., Frost, J., Doerr, S., & Chen, S. (2021). The FinTech gender gap. Available at SSRN 3799864.

7.2.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Canada

Traditional financial institutions are increasingly partnering with FinTech firms to provide financial services to SMEs. SMEs are realizing the potential of innovative technology to make their businesses more successful, with 42 percent of SME owners agreeing that using technology presents one of the highest impacts to increase their odds of success.[123] In response, traditional financial institutions and large technology firms are collaborating with FinTech firms to provide digital financial services to their SME clients. For instance, National Bank of Canada partnered with Mobeewave, a Canadian FinTech, to provide mobile POS contactless solutions for SMEs through an app, without any additional attachments. Canadian Imperial Bank of Commerce (CIBC) has also launched its SmartBanking for Business service in collaboration with FinTech firms Xero, Ceridian, and Intuit.

7.2.7 The Impact of COVID-19 on FinTech Services

Although the FinTech industry struggled because of the COVID-19 pandemic, the FinTech payments sector benefitted from the increase in online activity. There was a 62 percent decline in total funding raised by Canadian FinTech companies in 2020 (FinTech Global, 2021) and the number of FinTechs plummeted by 83 percent in 2020. However, COVID-19 also created an opportunity for increased FinTech uptake due to in-person restrictions. During our stakeholder interviews, a FinTech executive stated that the pandemic had been a huge accelerator of digital behavior in Canada. A Payments Canada study supports this claim,

[123] Accenture 2021 Canadian FinTech report. (2021). Retrieved October 18, 2021, from https://www.accenture.com/_acnmedia/PDF-149/Accenture-FinTech-report-2020.pdf

showing that 62 percent of Canadians reported using less cash since the start of the pandemic and 53 percent of Canadians reported increased use of contactless payment methods. As a result, FinTech firms offering payment services increased investment and roll-out new online products in response to increased demand caused by the pandemic.[124]

In addition, the recovery efforts for the FinTech industry were stifled due to its exclusion from COVID relief efforts. This contrasts with the COVID relief program roll-out in the US and UK, where FinTech firms were drafted in to provide relief to small businesses. However, FinTech firms still found a way to support businesses during the COVID-19 pandemic. Bench, a Canadian accounting automation firm for small businesses, was able to begin rehiring staff by shifting focus to helping SMEs apply for COVID relief in the US. FundThrough, an invoice factoring FinTech, committed USD 10 million of its own capital reserves to covering fees for their services.[125]

7.2.8 Emerging FinTech Companies in Canada

Although Canada does not receive the same kudos for innovation and technological development as other economies, it punches above its weight when it comes to emerging financial technology (FinTech) companies. Here's a look at four Canadian FinTech companies that are making a name for themselves by providing innovative financial solutions for the SME sector.

Table 13: Emerging FinTech Companies in Canada

Name of Emerging FinTech Company	Brief details
Shopify	- Shopify is an e-commerce FinTech that provides a retail platform and point of sales services for businesses. - Shopify IPO'd in 2015 at USD 1.27 billion, with valuation of USD 177 billion as of writing this report. - Shopify is diversifying its product offerings to begin providing banking services to its significant number of retail customers.[126]
ClearCo	- ClearCo provides equity-free capital to businesses with a revenue share repayment agreement.

[124] *COVID-19 pandemic dramatically shifts Canadians' spending habits* (2020). Payments Canada. Retrieved from https://www.payments.ca/about-us/news/covid-19-pandemic-dramatically-shifts-canadians'-spending-habits

[125] Kirkwood, Isabelle (2020) Fund Through Commits USD10 million to Help Small Businesses After Federal Government Rejects FinTech COVID-19 Relief Proposals. Retrieved October 18, 2021 from https://betakit.com/fundthrough-commits-10-million-to-help-small-businesses-after-federal-government-rejects-FinTech-covid-19-relief-proposals/

[126] Accenture 2021 Canadian FinTech report. (2021). Retrieved October 18, 2021, from https://www.accenture.com/_acnmedia/PDF-149/Accenture-FinTech-report-2020.pdf

	- ClearCo recently raised USD 100 million in Series C funding to take its valuation to USD 2 billion. - ClearCo provides an attractive alternative to venture capitalists that allows startups to maintain their ownership while financing their growth.[127]
FundThrough	- FundThrough provides invoice factoring services to SMEs to allow enterprises to maintain consistent cashflow. - Current valuation is undisclosed though the firm has raised a total of USD 92 million from 5 funding rounds. - The Canadian Federation of Independent Businesses found that 50 percent of SMEs in Canada cite cash flow as their main issue. FundThrough will be providing a direct solution to this problem.[128]
Bench	- Bench offers bookkeeping and financial services to small businesses who cannot afford the time or the money to handle their own bookkeeping. - Current valuation is undisclosed, though Bench recently raised USD 60 million in Series C funding.[129] - With SMEs accounting for the vast majority of businesses almost all economies, the market for this product is significant. - Bench has also begun offering banking products as part of its service offerings.

[127] Mascarenhas, Natasha (2021). *Clearco gets the SoftBank stamp of approval in new USD215M round.* TechCrunch:Canada. Retrieved from https://techcrunch.com/2021/07/08/clearco-gets-the-softbank-stamp-of-approval-in-new-215m-round/

[128] Hamilton, Alex (2020). *Canadian invoice firm FundThrough raises USD50m to support SMEs.* FinTech Futures: North American Edition. Retrieved from https://www.FinTechfutures.com/2020/10/canadian-invoice-firm-fundthrough-raises-50m-to-support-smes/

[129]*Bench Raises USD60 Million USD Series C and Expands Beyond Accounting with Launch of Bench Banking.* (2021) Yahoo!Life. Retrieved from https://www.yahoo.com/lifestyle/bench-raises-60-million-USD-100000056.html

7.3 CHILE

7.3.1 DFS Context and Trends

Over the last few years, the FinTech sector has been growing rapidly in the economy. From 2016 to 2021, the number of FinTech enterprises grew by almost 220 percent from 56 businesses to 179 businesses. As shown in Figure 15, the increase in FinTech enterprises seem to be growing exponentially. In addition, they are gaining more experience as 26 percent of FinTech have more than 5 years of experience and 40 percent have been in operation between 3 and 5 years. However, there is an unequal physical distribution of FinTech companies in Chile possibly due to low financial literacy. Around 83 percent of FinTech businesses based in Chile originate from Santiago in 2021.[130]

Figure 15: Evolution of the Number of FinTech Firms

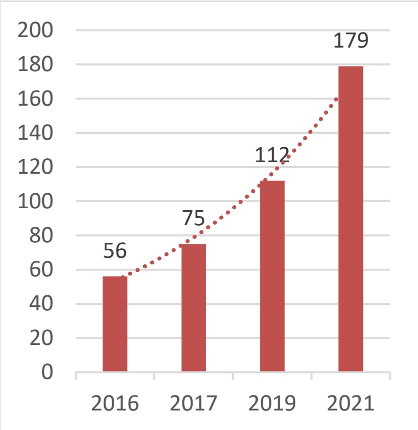
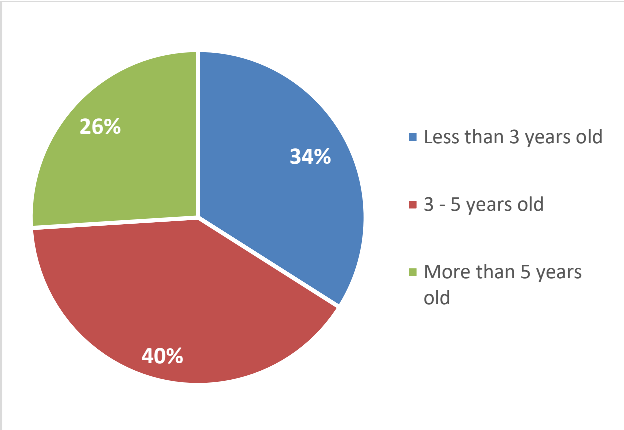


Figure 16: Age of FinTech Company



Source: Finnovsita, Chile radar 2021

The sector is mainly composed of small firms (according to Chilian standards). Small firms represent the largest share of FinTech enterprises at around 36 percent followed by micro (34.8 percent), medium (20.2 percent) and large enterprises (9 percent). In addition, around 55 percent of FinTech firms have between 1 and 10 employees, 20 percent have between 11 and 25 employees, 9 percent between 26 and 25 employees, 11 percent between 51 and 100, and only 5 percent have more than 100 employees.

[130]Source: Finnovista FinTech Radar for Chile 2021 "https://www.finnovista.com/radar/con-67-empresas-nuevas-el-ecosistema-fintech-en-chile-crece-a-un-ritmo-de-38-anual-llegando-a-las-179-startups-en-2021/"

Figure 17: Size of FinTech Companies

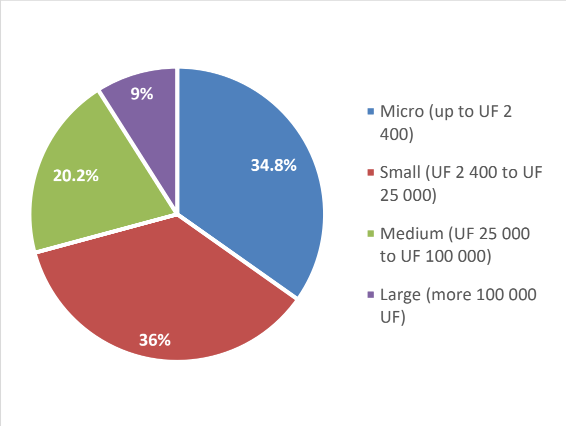
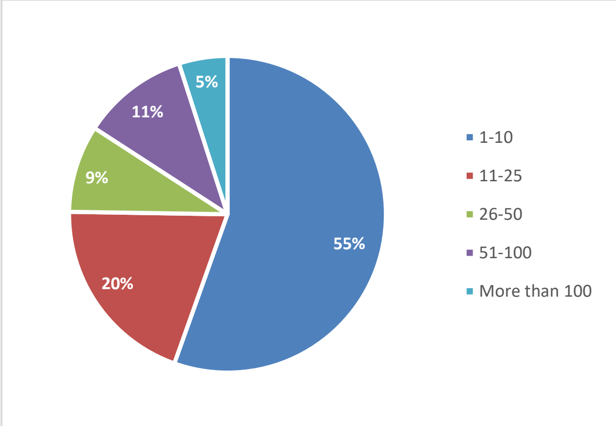


Figure 18: Number of Employees in FinTech Enterprises



Source: Finnovsita, Chile radar 2021

The rapid and impressive development in infrastructure deployment for connectivity is a potential benefit to FinTech firms. Internet penetration in Chile is high at more than 82 percent[131] of the population. In addition, it is the first OECD economy to legislate in favor of network neutrality. From 2010 to 2018, Chile witnessed a 10-fold increase in the adoption of mobile broadband reaching 92.4 per 100 inhabitants in June 2019[132]. The share of Chilean households with a fixed or mobile broadband connection is 87.5 percent and the business broadband connectivity is also high at 89.6 percent, according to the first Chilean ICT survey conducted in 2019.[133] As people have more access to internet connection and mobile devices, FinTech services become more accessible.

Additionally, while the volume of alternative finance[134] in Chile has been growing rapidly, FinTech enterprises still find some difficulties raising capital. From 2019 to 2020, alternative financing has increased by 64 percent from USD 489 million to USD 803.6 millions. In 2019, around 64 percent of the enterprises were already scaling in sales and 65 percent of companies have raised capital amounting to USD 107 million.[135] The main sources of funding for FinTech enterprises are angel investors (27 percent), government subsidies (17 percent) and family, friends, and fans, while only 3 percent of FinTechs were involved in crowdfunding.

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[131] *Individuals using the internet (percent of population) - Chile*. Data. (2017). Retrieved November 2, 2021, from https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=CL.

[132] *Home*. OECD Economic Surveys: Chile 2021 | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/4c7db951-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F4c7db951-en

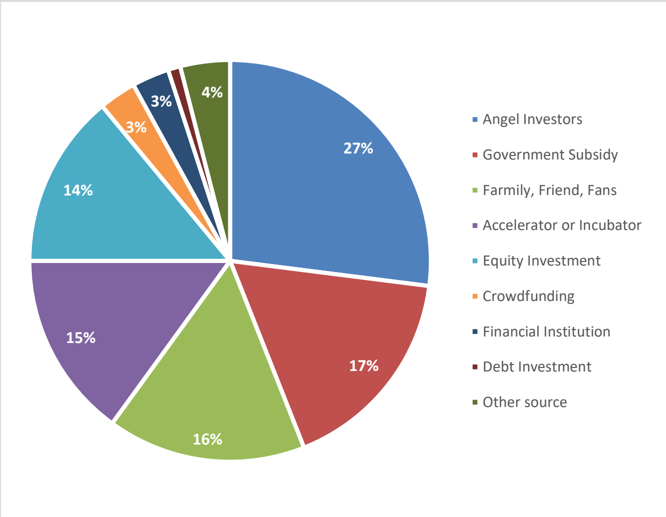
[133] Ibid

[134] Alternative Financing is the provision of financial products outside traditional banking such as crowdfunding and P2P Lending

[135] *Primer Estudio Fintech en Chile: Desafíos y ... - mundialis*. (2019). Retrieved November 2, 2021, from https://www.mundialis.cl/public/uploads/noticias/fintech-report-chile-digital.pdf.

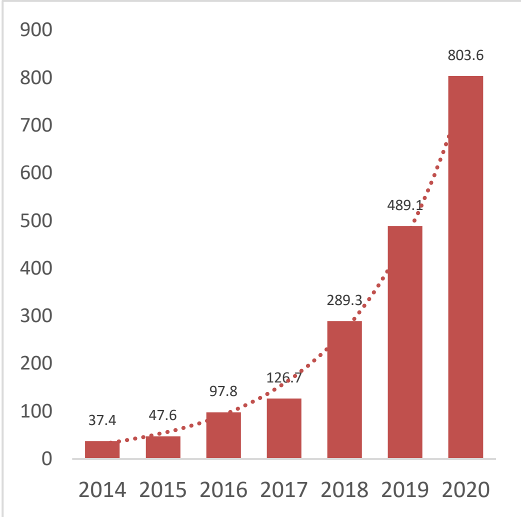
In addition, 71 percent of FinTechs find that there are not enough funding sources in the economy with a particular shortage of venture capital, 75 percent see a lack of assistance from public entities when starting a business, and 88 percent of consolidated financial institutions and corporates believe there are not enough private incentives to promote collaboration with FinTech.[136]

Figure 19: Source of Funds of FinTech



Source: Finnovsita, Chile radar 2021

Figure 20: Total Alternative Finance Volume of Leading (in millions of USD)



Source: Cambridge source for Alternative Finance

Overall, the FinTech sector faces regulatory and institutional challenges. The FinTech industry is not attractive, 50 percent of FinTech companies indicate that they have had problems finding the professionals that the industry requires and 36 percent of FinTechs declared they encounter challenges in attracting the right talent. The regulatory gaps act as an inhibitor, generating uncertainty regarding the future and increasing the risk when investing in this type of business, where 63 percent of surveyed FinTech indicate that it is difficult to comply with regulations in Chile. In addition, there aren't enough private incentives, 88 percent of the consolidated financial and corporate institutions state that there are not enough private incentives to promote collaboration with FinTechs, of which 47 percent mention challenges in building alliances with banks and other institutions.

136 Ibid

Figure 21: Internal Impediments that FinTech Companies Faced

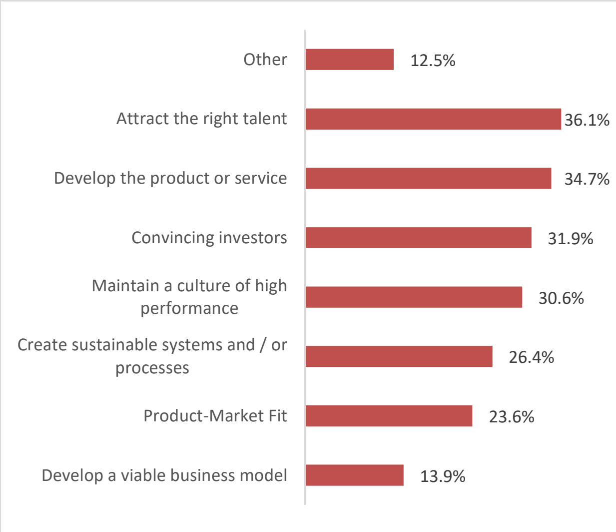
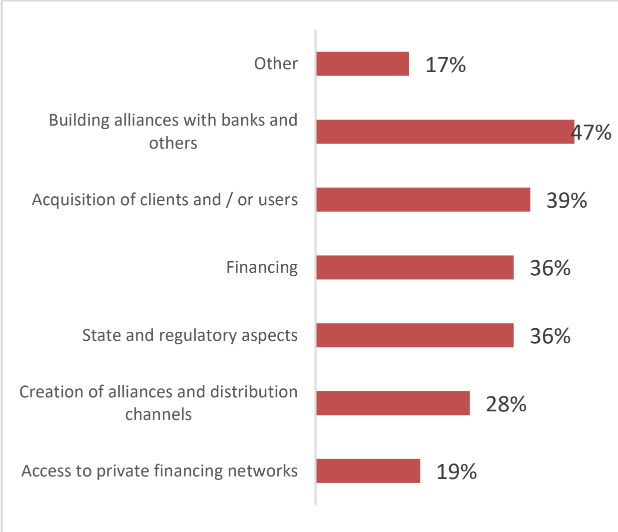


Figure 22: Main Challenges of FinTech Enterprises



Source : EY "Las FinTech en tiempos de COVID-19: El bastión de la economía digital"

7.3.2 The FinTech Ecosystem in Chile

7.3.2.1 Main Actors in the FinTech Ecosystem

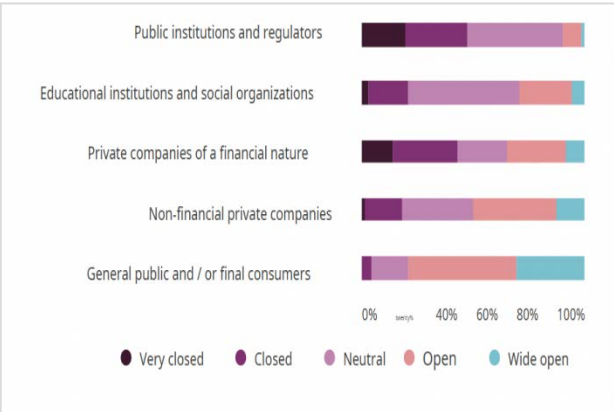
There are 5 main actors in the FinTech ecosystem in Chile: i) FinTech Firms; ii) FinTech Collaborator; iii) Regulators; iv) Financiers and v) End-consumers of FinTech solutions. The first is the FinTech firms themselves, which offer the different FinTech solutions in the market. FinTech collaborators may be traditional financial institutions or large technology companies looking to incorporate FinTech services into their operations or promote these services. This may be done through collaborations with existing FinTechs, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. For example, Finnovista is an innovation and venture development firm that builds and operates innovation programs for corporations that empower and leverage the FinTech and Insurtech ecosystems to achieve business results and build new organizational capabilities[137]. Third, are the regulatory authorities that oversee the activities of firms operating in the finance and technology space. The fourth actor group is the financiers who invest in the growth of FinTech firms. This includes venture capitals, angel investors, as well as financial support programs from the government. The final actor is the end consumer of FinTech services, who could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

[137] *About Us*. Finnovista. (2021, September 28). Retrieved November 2, 2021, from https://www.finnovista.com/en/about-us/#finnovista.

7.3.2.2 FinTech Usage

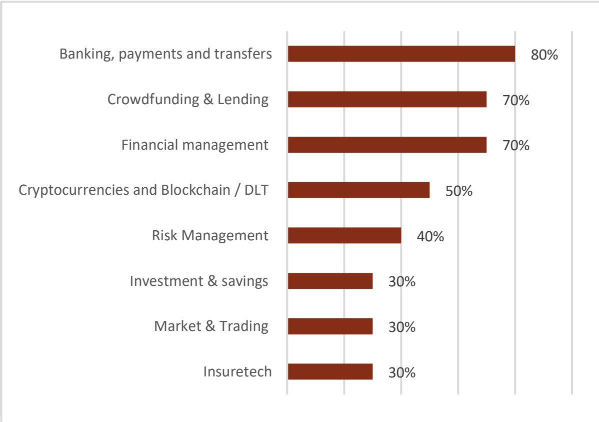
The general populace seems to be the most interested and open to adopting FinTech solutions in Chile, while investors in FinTech mostly are interested in investing in banking payments and transfers in the FinTech environment. From Figure 23, public institutions and regulators, educational institutions and social organizations, and private companies of a financial nature seem to be the least open to adopting FinTech solutions. Non-financial private companies and the general public and/or final consumers seem to be keen towards adopting FinTech Solutions. Around 80 percent of investors in the EY survey[138] stated that they are interested to invest in the FinTech sector. Meanwhile, for crowdfunding & lending as well as financial management, 70 percent of investors are interested in investing in these subsectors followed by cryptocurrencies and blockchain/DLT (50 percent).

Figure 23: How Open are Investors /Individuals/ Institutions to Adopting FinTech Solutions?



Source : *EY "Las FinTech en tiempos de COVID-19: El bastión de la economía digital*

Figure 24: FinTech Subsectors Businesses Normally Invest in



7.3.3 FinTech Regulatory Framework

7.3.3.1 Key Regulatory Actors

The supervision and enforcement of the FinTech provisions are entrusted to two authorities, depending on the services the companies provide to their customers:

[138] *Primer Estudio Fintech en Chile: Desafíos y ... - mundialis*. (2019). Retrieved November 2, 2021, from https://www.mundialis.cl/public/uploads/noticias/fintech-report-chile-digital.pdf.

Table 14: Key Regulatory Actors in Chile

Regulator	Role
The Financial Market Commission (CMF)	The CMF's main objectives are to ensure the proper functioning, development, and stability of the financial market, facilitating the participation of market players and promoting public faith in the system. It has the following functions: supervisory function, regulatory function, sanctioning function and market development and promotion function. It is responsible of regulating the FinTech market and introducing new regulations in this domain.
The Financial Analysis Unit (UAF)	The objective of the UAF is to prevent the use of the financial system, and other sectors of Chilean economic activity, for the commission of the crimes of money laundering (LA) and financing of terrorism (FT). It supervises the FinTech sector in case its services are used for fraud, money laundering or financing terrorism.

7.3.3.2 Regulations Related to FinTech Services

The FinTech sector suffers from a lack of specific regulation, but it does have to follow the same regulations as other institutions. Therefore, FinTech companies must observe the different dispositions applicable to them, which may be found in different areas of the Chilianllegal system**.** The regulations mainly cover FinTech businesses in the payment services and the handling of personal data of individuals. The table below presents the regulation that affect the FinTech services:

Table 15: Regulations Related to FinTech Services in Chile

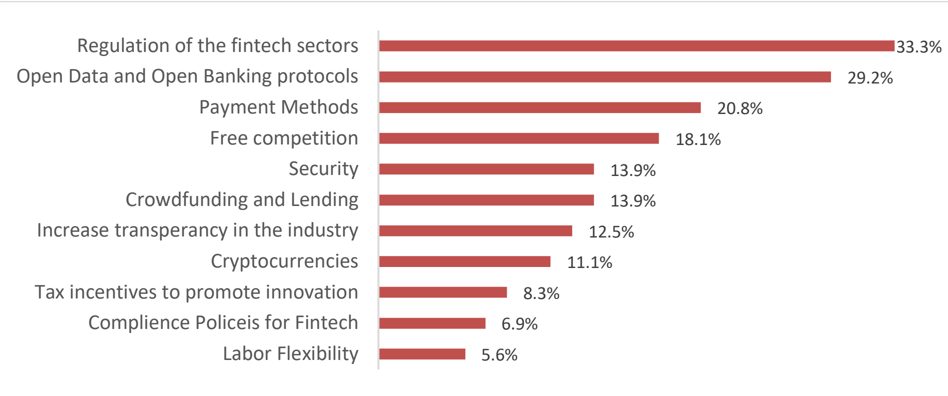
Key Area of Regulation	Regulation Name	Details
Payment Services	Law N° 20,950 non	Non-Bank institutions, which include FinTech banking firms, may issue and operate payment cards with provisional funds, as long as they comply with specific requirements that include registration and liquidity reserves.[139] The Chilean Central Bank is in charge of issuing the secondary regulations related to the provision of services related to payment card schemes that various fintech have to observe attending to their business models.
Open Banking	No regulation	Banks in Chile, using APIs, do share their clients' personal information with third-party service providers across private

[139] *Chile Fintech - Legal 500*. (n.d.). Retrieved November 3, 2021, from https://www.legal500.com/guides/chapter/chile-fintech/?export-pdf.

		agreements, without a mandatory regulation that governs it.[140] FinTech banking companies can benefit from this environment to offer more competitive prices.
Personal Data	Law N° 19.628	This law regulates the transmission, treatment and storage of personal data. In short, it requires to ask permission of consumers to collect and modify their data.[141] FinTech services that store personal data of consumers have to abide by this regulation.

FinTech regulations are highly demanded by the enterprises in this sector. Around 63 percent of FinTechs indicate they have difficulties in complying with the regulations, 69 percent believe that regulatory sandboxes should be implemented, and 60 percent consider that the open banking and open data protocols are effective.[142] In addition, in the EY survey around 33 percent of the FinTech surveyed believe that regulation of the FinTech sectors should be a priority followed by 29.2 percent on open data and open banking protocols.

Figure 25: Priority Areas for Regulation



Source: EY "Las FinTech en tiempos de COVID-19: El bastión de la economía digital

The government aims to introduce new regulations for the FinTech sector to address the challenges of the enterprises in this field. As of writing, the Bill is already being discussed in the congress in its second constitutional stage. It has already been approved by the Chamber of Deputies, and is being discussed in the Senate. The Bill will introduce a mandatory open banking standard that will allow the user to choose services outside of their bank to make

[140] Ibid
[141] Ibid
[142] *Primer Estudio Fintech en chile: Desafíos y ... - mundialis*. (2019). Retrieved November 2, 2021, from https://www.mundialis.cl/public/uploads/noticias/fintech-report-chile-digital.pdf.

direct payments more easily and efficiently[143]. In addition, a set of technology-based financial activities identified as relevant business models will be incorporated into the CMF's regulatory and oversight perimeter: loan or investment crowdfunding platforms, alternative transaction systems, credit and investment advisory services, intermediation or routing services for financial instruments orders and financial instruments custody services.[144] New financing alternatives for SMEs mini bonds include (i) simplified procedures for registration of debt securities, without collection of fees; (ii) automatic authorization with CMF, with less regulatory burden and which may be offered to retail investors.[145] The financial customer protection entails the obligation for financial service providers to carry out a risk profile of their clients.[146] The CMF is empowered to establish minimum conditions applicable to the audited institutions in matters of customer service.[147]

7.3.4 FinTech & SMEs

7.3.4.1 The SME Sector in Chile

SMEs represents a small share of enterprises and of the total sales, and they face challenges in access to finance. While large firms only represent 1.4 percent of all enterprises, they represent around 87 percent of total sales in 2018.[148] SMEs represented around 23 percent of all enterprises while micro enterprises dominate the market at 75.5 percent. According to the bank credit survey of the Central Bank of Chile, credit conditions were more restrictive for SMEs during 2018 and relatively stable throughout the same year. An overly strict regulatory environment accounts for weak competitive pressure in Chile and is an important barrier to SME growth according to the Longitudinal Survey of Companies (ELE) in 2019, which aims to investigate the sources of funding of SMEs. Around 56 percent applied for credit from a financial institution within the last year and received it. Thirty-one percent have not applied for any type of credit, 10 percent applied for it, but it was rejected, 2 percent applied for credit, but from a non-financial institution and the remaining 1 percent were approved for the credit but did not accept it[149]. SMEs need financing, not only for the start of their business,

143 Ministerio de Hacienda, (2021) "Seminario BID: "Innovación en la industria financiera un impulse a la reactivación e inclusión financiera"
144 Ibid
145 Ibid
146 Ibid
147 Ibid
148 *Home*. Chile | Financing SMEs and Entrepreneurs 2020 : An OECD Scoreboard | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/2bc5fd4d-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F2bc5fd4d-en.
149 *¿Cómo se financian las pymes en Chile?* AVLA Chile. (2019, November 29). Retrieved November 2, 2021, from https://www.avla.com/cl/como-se-financian-las-pymes-en-chile/.

but also to bridge liquidity shortages to pay suppliers, staff remuneration, debts, purchases of machinery, and remodeling, among others.[150]

7.3.4.2 FinTech-Based Financial Inclusion of SMEs

FinTech are increasingly involved in the development of SMEs in Chile. The economy has witnessed an increase in finance from FinTech solutions to SMEs reaching USD 804 million in 2020, an 83 percent increase from 2013[151]. In 2021, 71 percent of FinTech operating in Chile direct their solutions to underbanked SMEs and 63 percent focus on financial inclusion solutions[152]

The FinTech sector in Chile is very diversified and offers SMEs different services with Payment & Remittances, Enterprise Financial Management (EFM) and Lending being the main segments. Around 23 percent of FinTech enterprises operate in Payment & Remittance, 19 percent in EFM and 13 percent in Lending. While, the segment of Scoring, Identity, Fraud & BI represents 7 percent of the FinTech sector, it has been growing rapidly since 2019 with an increase in the number of enterprises of 316 percent since 2019. This is followed by Lending (105 percent) and Trading & Markets, Insurance and Digital Banking (all three grew by 63 percent)[153].

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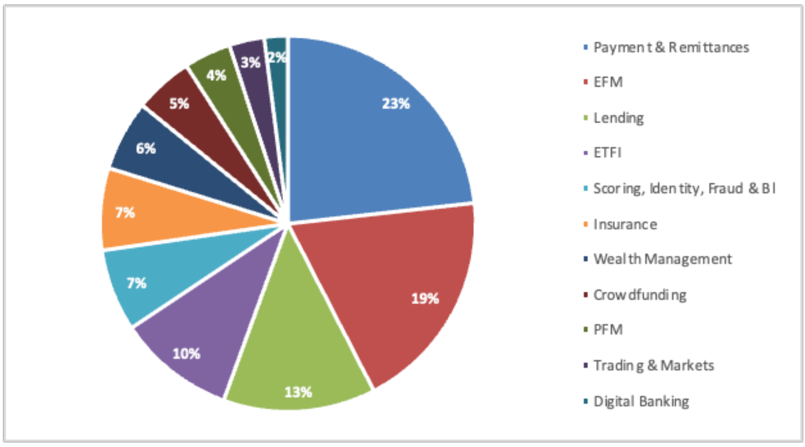
[150] Ibid
[151] *Innovación Financiera: La Recuperación Pasa por las pyme*. Asociación de Empresas Fintech de Chile. (n.d.). Retrieved November 2, 2021, from https://www.FinTechile.org/noticias/innovacion-financiera-la-recuperacion-pasa-por-las-pyme.
[152] Finnovista FinTech Radar for Chile 2021 "https://www.finnovista.com/radar/con-67-empresas-nuevas-el-ecosistema-fintech-en-chile-crece-a-un-ritmo-de-38-anual-llegando-a-las-179-startups-en-2021/"
[153] Ibid

Figure 26: FinTech Enterprises Distribution



Source: Finnovsita, Chile radar 2021

The FinTech industry's presence is expected to be able to provide impetus to the development of micro, small, and medium enterprises (MSMEs). FinTech companies still face many challenges in Chile that hinder their capacity to grow and finance SMEs. There exists a shortage of available capital to FinTech businesses, especially a lack of venture capital, and around 71 percent of the FinTech companies surveyed by EY stated that there are not enough sources of financing in the economy[154]. In addition, the FinTech sector suffers from low attraction around 50 percent of FinTech companies interviewed by EY indicate that they have had problems finding in Chile the professionals that the industry requires[155]. The regulatory gaps act as an inhibitor, generating uncertainty regarding the future and increasing the risk when investing in this type of business. Sixty-three percent of those surveyed indicate that it is difficult to comply with regulations in Chile[156]. Another issue is that there are not enough private incentives, 88 percent of the consolidated financial institutions and corporate state that there are not enough private incentives to promote collaboration with FinTech.

7.3.4.3 Regulations Affecting the SME Sector and FinTech Services

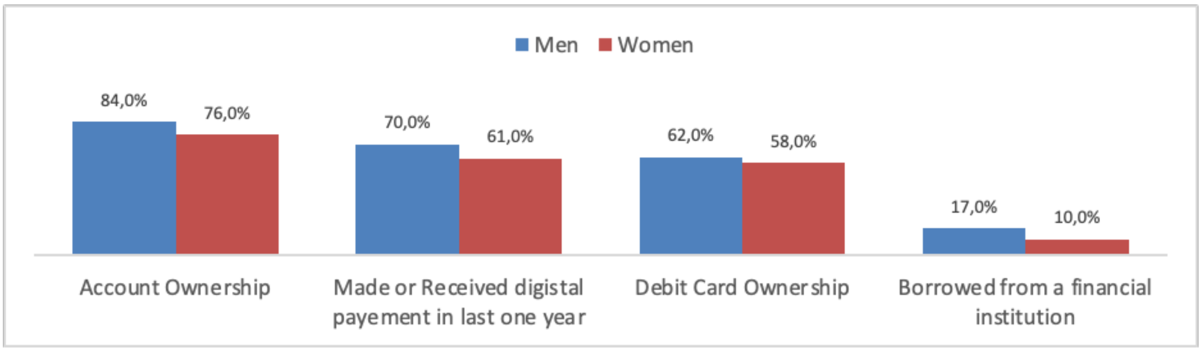
The new FinTech Bill[157] will be greatly beneficial to SMEs especially in the sector of lending. Proportional regulation for crowdfunding platforms that provide loans and capital to SMEs will be introduced. In addition, the benefits will include "minibonds" as self-registration debt instruments that SMEs can issue in the capital market.

[154] Finnovista FinTech Radar for Chile 2021 https://www.finnovista.com/radar/con-67-empresas-nuevas-el-ecosistema-fintech-en-chile-crece-a-un-ritmo-de-38-anual-llegando-a-las-179-startups-en-2021/
[155] Ibid
[156] Ibid
[157] Submitted to the Chilean Congress on September 3rd, 2021

7.3.5 Gender-based Impact of FinTech Financial Inclusion

Men and women are moderately involved in the financial services offered in the economy; men use more of these services than women, according to the Global Findex Database 2017. Around 84 percent of men and 76 percent of women over the age of 15 own an account in a financial institution. In addition, 70 percent of men and 61 percent of women have made or received a digital payment in the last year and around 60 percent of the population owns a debit card. Finally, the share of the Chilian population that borrows is significantly higher for men than women, around 17 percent of men have borrowed from a financial institution, whereas only 10 percent of women have.

Figure 27: Gender Split and Usage of Financial Services



Source: Global Findex Database, 2017

As there are differences between men and women in the financial services in the economy, women also are still lagging with regards to the workforce. Around 79 percent of men participate in the labor force in contrast to 53 percent for women[158]. In addition, only 19 percent of FinTechs in Chile have women founding members, although the difference in financial literacy is small, 43 percent for men and 39 percent for women. Finally, around 19 percent of men use FinTech solutions in Chile in 2021 compared to 17 percent for women.

7.3.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Chile

The Latin American financial services group Credicorp plans to add functionality and prepaid card solution to its Chilean Tenpo digital wallet and bring other FinTechs from its portfolio to the economy. Launched in Chile 8 months ago and used today by more than 400,000 customers, Tenpo is ready to expand during 2021 to the international transfer and microcredit segments. The measure is part of the efforts to boost levels of financial inclusion in the

158Source: World Bank Open Data, https://data.worldbank.org economy, according to a statement from Tenpo. One of its objectives is to become the first neobank in the economy.[159]

7.3.7 The Impact of COVID-19 on FinTech Services

Because the COVID-19 crisis has undoubtedly accelerated the digitization of the financial industry, many companies offering online services have experienced a high demand. This has allowed them to provide greater support to SMEs, either for financial education or for the delivery of direct credits.[160] The key informant interviews also emphasize that with the pandemic, the adoption of FinTech solutions accelerated and the need of regulations on this sector grew substantially. In addition, some FinTech businesses introduced innovative solutions during the pandemic. An InsurTech from Chile called Jooycar introduced a new product called "insurance per kilometer" to address the changing mobility habits of citizens in Chile during Covid-19[161].

FinTech companies stated the pandemic has provided an opportunity to grow through a digital transformation in the economy. According to a EY FinTech survey for Chile[162], around 53 percent of the FinTech firms that participated in the survey reported that they broke even in 2020, and 70 percent said that their income grew by over 30 percent last year. Similarly, 52 percent stated that their income had increased. Most of the tech companies that responded (71 percent) stated that they are going through a period of growth, with sales increasing. In the context of the health crisis, 60 percent experienced client base growth and 55 percent saw an increase in the number of transactions completed.

7.3.8 Emerging FinTech Companies in Chile

For Chile, the economy's growing technology, and startup scene can be expected to play an important role in driving economic recovery. While many industries have suffered, in Chile the likes of the digital financial sector have seen growth, thanks to the demand generated by people forced to acclimatize to a more restricted lifestyle, as well as increased awareness of health and welfare. Below are some startups in Chile that can be expected to grow in its aftermath due to their services provided to the SME sector.

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[159] *BNAMERICAS - Fintech de Credicorp acelera ritmo de innova...* BNamericas.com. (n.d.). Retrieved November 2, 2021, from https://www.bnamericas.com/es/noticias/fintech-tenpo-de-credicorp-acelera-ritmo-de-innovacion-financiera-en-chile.

[160] Source: Finnovista FinTech Radar for Chile 2021 https://www.finnovista.com/radar/con-67-empresas-nuevas-el-ecosistema-fintech-en-chile-crece-a-un-ritmo-de-38-anual-llegando-a-las-179-startups-en-2021/

[161] CCAF, 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.

[162] *Primer Estudio Fintech en Chile: Desafíos y ... - mundialis*. (2019). Retrieved November 2, 2021, from https://www.mundialis.cl/public/uploads/noticias/fintech-report-chile-digital.pdf.

Table 16: Emerging FinTech Companies in Chile

Name of Company	Services
Payku	Payment platform focused on electronic commerce, from personal ventures, small stores, start-ups, and large companies.
Welten	FinTech that introduced prepaid credit cards to Chile. He is currently developing financial technology specifically payment gateways for the B2B area and applications based on blockchain.
Cryptomkt	Platform that promotes financial inclusion through Blockchain technology and seeks to be the largest digital bank in the Latin American region
Compara online	Comparator of insurance and financial products. It brings together the offers of all the current companies in the market, allowing its users to make the best decision when hiring insurance and financial products.
Chita	They provide factoring services to SMEs
Flow	An online payment platform where you can **pay** and **receive payments** quickly and securely
Mundialis	Collaborative financing factoring platform, aimed at SMEs throughout Chile.
Cumplo	Leading crowdlending platform that fund SMEs

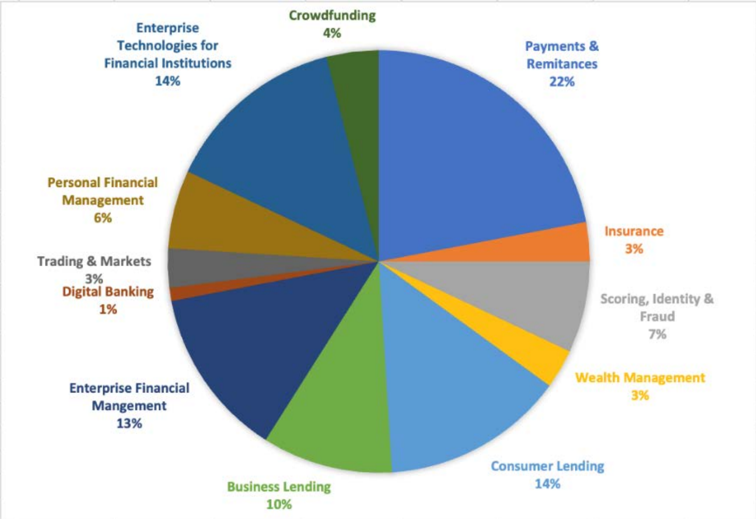
7.4 COLOMBIA

7.4.1 DFS Context and Trends

Colombia has reportedly consolidated its position as the third-largest FinTech ecosystem in the region, with a total of 200 FinTech startups operating in its market[163]. According to the latest FinTech Radar from Finnovista, Colombia is one of the most resilient players in Latin America, during times of general growth within the FinTech sector as well as global macroeconomic uncertainty. The Community Andean Member reportedly continues to have traction in the FinTech sector and has placed itself as one of the leading FinTech markets in Latin America for yet another year, behind only Mexico and Brazil.[164]

The solutions offered by Colombian startups suggest an overall interest in promoting inclusion and financial services to improve the economic well-being of the population. More than 60 percent of the sector's ventures have received external funding during 2020 according to Finnovista and the IDB[165]. By segments, lending leads for the first time the FinTech services offering, with 48 startups representing almost 25 percent of the sector, Consumer Lending with 28 startups (14 percent), and Business lending with 20 (10 percent). This is followed by Payments and Remittances, with 43 startups, accounting for 22 percent of the market, while the Enterprise Technologies for Financial Institutions (ETFI) segment now has 27 startups and accounts for 14 percent of the ecosystem. The Enterprise Financial Management (EFM) segment also stands out, with 25 FinTech solutions and 13 percent of the sector.

Figure 28: Colombia Fintech Distribution by Segment



[163] https://colombiafintech.co
[164] https://www.finnovista.com
[165] Ibid.

7.4.2 The FinTech Ecosystem in Colombia

7.4.2.1 Main Actors in the FinTech Ecosystem

There are 4 main actors in the FinTech ecosystem in Colombia: i) Regulatory Authorities ii) FinTech firms; iii) FinTech financiers and collaborators iv) FinTech consumers. The first group of actors oversees the activities of firms operating in the finance and technology space. This group also includes more other regulators such as consumer protection authorities, with the Central Bank of Colombia being the main regulatory institution for it´s financial sector. Second are the FinTech firms themselves, who leverage innovative technologies like payments and lending to provide financial services. The third actor group comprises of the financiers and collaborators that invest in the growth of FinTech firms. This includes venture capitals, angel investors, incubator funds, as well as financial support programs from the government. For example, FinTech Colombia[166] is the association of leading companies in the sector and corporate partners for the enrichment and development of financial technologies. We can also find in this group Finnovista[167], who helps corporations develop innovative programs that leverage the FinTech and Insurtech ecosystem to achieve business results and develop new organizational capabilities. The final actor is the end consumer of FinTech services, which could include individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.4.2.2 FinTech Usage

Colombia has one of the best rates of FinTech adherence in the world. A study by EY[168] highlighted that Colombia is the eighth market in the world with FinTech adherence, which means that about 32 million people have some form of financial technology solution. The offer is complementary, traditional players reach certain audiences and FinTechs reach the under-banked. The digital payments channel is the segment that has shown the highest acceptance and growth in recent times. This is evidenced by the fact that transactions made through the PSE (Secure Online Payment) button grew by 121 percent from January to July 2020, moving an average of around COP 20 billion per month, according to data from ACH Colombia.[169]

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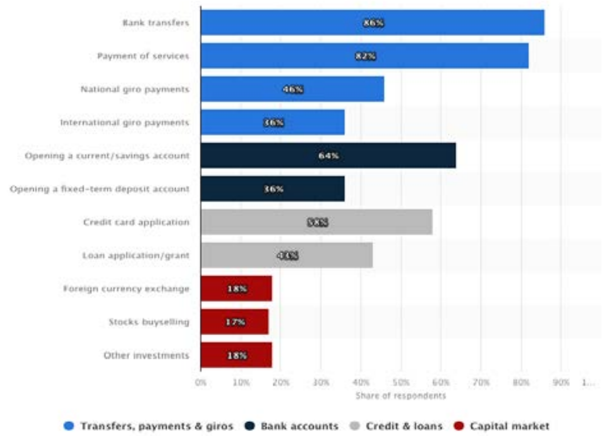
166 https://www.colombiaFinTech.co
167 https://www.finnovista.com/
168 EY – Global FinTech Adoption Index 2019
169 https://www.larepublica.co/finanzas/en-promedio-se-mueven-cerca-de-20-billones-por-medio-del-boton-de-pse-cada-mes-3050895

Figure 29: DFS Services Usage in Colombia by Sector



7.4.3 FinTech Regulatory Framework

7.4.3.1 Key Regulatory Actors

Several institutions and laws regulate the FinTech sector in the Colombian financial system, which are housed in the Political Constitution, circulars of the Financial Superintendence of Colombia (SFC), decrees, and presidential sanctions that allow, not only the expansion of the sector, but also more transparent management between consumers, financial entities and the Government. The supervision and enforcement of the FinTech Provisions are entrusted to several authorities, depending on the services the companies provide to their customers:

Table 17: Key Regulatory Actors in Colombia

Authority	Responsibilities
Colombian Central Bank	The main financial regulator and overseer of compliance with the laws and regulations under which FinTech companies provide services.
Colombian Ministry of Finance and Public Credit	Issued Decree 1234 of 2020 ("Decree 1234") to promote innovation in financial services through the establishment of a regulatory sandbox for companies dedicated to implementing financial technology innovation
Superintendence of Finance	In charge of issuing the CTE (Controlled Trial Environment) [170] temporary operating licensing

[170] See table below- Regulations Related to FinTech Services

Superintendence of Companies and DIAN (Tax Authority)	In charge of tax regulations for innovative approaches in financial services
Administration System for the Prevention of Money Laundering and Financing of Terrorism (SARLFT).	Regulation and compliance regarding AML

7.4.3.2 Regulations Related to FinTech Services

Colombia does not have a proper or specific FinTech regulation. Therefore, FinTech companies must observe the different dispositions applicable to them, which may be found in different areas of the Colombian legal system. Although there are no specific regulations for the FinTech sector, Colombia has seen an active development of regulation and legislation aimed at including new players, models and infrastructure in the financial system. This active approach has led to the analysis of innovative models that have been brought by FinTech companies, both locally and internationally. Colombia currently has the third-largest number of FinTech developments in Latin America, behind Brazil and Mexico. Thus, the Colombian financial regulator's approach towards FinTech has not only focused on allowing or implementing certain models in Colombia but also on fostering the implementation of those that are deemed to be beneficial to the financial system.

Table 18: Regulations Related to FinTech Services in Colombia

Key Area of Regulation	Regulation Name	Details
Crowdfunding	Decree 1357 of 2018	This law regulates the activity of collaborative financing (internationally known as crowdfunding), to promote the flow of resources for Colombia´s SMEs and financial innovation.
Payment Gateways	Regulation No. 008 of 2018.	Establishes the security requirements for all payment gateways. Imparting instructions on minimum security and quality requirements for the performance of payment application transactions.
Regulatory Sandbox	Decree 1234 of 2020	Establishment of a Regulatory Sandbox, called the Controlled Trial Environment (Espacio Controlado de Prueba) ("CTE"), which is defined as the rules, requirements, proceedings and conditions under which FinTech projects or development programs can be tested.
Payments and Biometric Security Identifiers	Regulation No. 029 of 2019	The Superintendency of Finance issued a series of amendments to the current regulatory framework to updating the financial system to accommodate new technological trends in payment and biometric security identifiers.

Robo-advising technology	Decree 661 of 2018	This decree elevated advisory services to the category of securities market activity, which must be carried out exclusively by entities supervised by the Superintendencia Financiera de Colombia (SFC), through qualified and authorized natural persons.
FinTech Investment	Decree 2443 of 2018	This allows credit and other financial entities to invest in companies specialized in developing new technologies in the financial sector
Cybersecurity	Law 1273 of 2009	Which classifies computer crimes in Colombia, including infractions that are committed through networks or computer systems in the financial sector;
Taxes	Resolution 042 of 2020	Issued by DIAN (the Tax Authority), which relates to billing systems, technology providers and the registration of electronic sales' invoices
FinTech services provisioning	Decree 222 of 2020	This allows financial correspondents to supply their services not only through physical infrastructure but also through mobile and digital infrastructure.
Data Protection	Law 1266 of 2008	Regulates all personal data in financial, credit and commercial services.
Cloud	Circular No. 005 of 2019	Sets forth rules related to the use of cloud computing services
Transactions	Circular No. 006 of 2019	Establishes instructions, standards and requirements related to transactions with QR codes

On September 14, 2020, the Colombian Ministry of Finance and Public Credit (Ministerio de Hacienda y Crédito Público) issued Decree 1234 of 2020 ("Decree 1234"), to promote innovation in financial services through the establishment of a regulatory sandbox for companies dedicated to implementing financial technology innovation ("FinTech")**.** Decree 1234 permits interested participants to request from the Finance Superintendence (Superintendencia Financiera) certain exemptions from the general requirements of the General Finance Statute, Decree 2555 of 20101 ("Decree 2555"), including registration as a licensed company to pursue the financial and credit-related activity in Colombia.

Due to strict regulations, foreign FinTech companies find it difficult to enter the Colombian DFS market. It was mentioned during the data collection stage of this study (key informant interviews) that the Colombian financial regulatory framework establishes certain restrictions when foreign financial entities intend to offer financial products in Colombian territory or to Colombian residents, if applicable, it must be done through a representative office authorized by the Financial Superintendency. However, not all FinTech companies represent a financially regulated activity and may be considered as a regular commercial activity, being able to offer their products without requiring specific authorization.

7.4.4 FinTech & SMEs

7.4.4.1 The SME Sector in Colombia

The SME sector is of major importance for the Colombian economy, however, in terms of sales, the minority large companies dominate. According to a study provided by ACOPI - Colombian Association for Micro, Small and Medium Enterprises, SMEs in Colombia represent up to 96 percent of it´s total of enterprises, contributing to more than 35 percent of the GNP, generating almost 65 percent of the labor.[171] The SME sector is oriented mainly to the domestic markets, however, according to ACOPI, 6 percent of the production is exported and 94 percent goes to the domestic market; in the year 2004, the exports were of USD 900 million. The main destinations of the exports are the Members of the Andean Community and the United States.

7.4.4.2 FinTech-Based Financial Inclusion of SMEs

Only 13 percent of FinTechs in Colombia focus on products and services for companies, so it follows that most FinTechs are currently positioned to provide services to consumers rather than SMEs. A study conducted by the IDB and Finnovista[172] in 2020, however, shows a growth in the specialization of loans for SMEs, a need that was previously unmet and that now, with the economic uncertainty resulting from recent events, could experience an interesting growth. In this sense, initiatives are starting to be visible, such as the one launched by the Ministry of Commerce, Industry and Tourism and iNNpulsa.[173]

In Colombia, SMEs face a scenario of low credit supply and high-interest costs. One of the factors that make the credit scenario for Colombian SMEs complex is that 75 percent of transactions are made using cash and advances in technology are hardly used to improve business efficiency. In fact, according to the Superintendencia Financiera de Colombia[174] (Asobancaria calculations), microcredits have suffered considerable declines over the last few years.

The main FinTech services available for SMEs in Colombia include (i) Business Lending, ii) Payment and Remittances, and **(iii) Enterprise Financial Management.** The first is easy and 100 percent digital online lending platforms for micro and small enterprises. The payment

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171 The SMEs in Colombia: Institutions and Policies - https://www.pecc.org/images/stories/publications/SME-2007-4-The_SMEs_in_Colombia-Institutions_and_Policies-Acosta-Rojas.pdf

172 https://www.finnovista.com

173 https://innpulsacolombia.com/

174 https://www.superfinanciera.gov.co/

and remittances are platforms that allow online businesses to accept and process payments through payment methods that can be integrated with web and mobile applications, and the EFM tools allow them to organize all transactions and perform automated reconciliations that ensure the traceability of information without the need for code.

7.4.4.3 Regulations Affecting the SME Sector and FinTech Services

The following list contains the tax benefits for companies rendering FinTech or tech-related services that have an impact on SMEs:

Table 19: Regulations Affecting the SME Sector and FinTech Services

Initiative	Description
Tax benefit for orange economy companies	The possibility for a company to be exempted from income tax for a 7-year term, in connection with the income obtained from the development of technological value-added industries, creative and cultural activities. To obtain this benefit, the requirements established in numeral 1 of Article 235-2 of the Colombian Tax Code and the regulatory decree issued by the Colombian Government must be met.
VAT exclusion for cloud computing services	Services that fit the definition of "Cloud Computing", according to a legal opinion 17056 of August 25, 2017, issued by the Tax Authority, are not taxed with VAT. The service provider must fill in the self-diagnostic form for the service, issued by the Ministry of Information Technology and Telecommunications.
Law 1955 of 2019	This established a new tax incentive that allows small/medium-sized businesses to convert 50 percent of the investment into science, technology and/or innovation project into a tax credit that can be used to offset taxes.

7.4.5 Gender-based Impact of FinTech Financial Inclusion

The rise of financial technologies is also a vehicle for the inclusion and empowerment of women in Colombia. On average, 80 percent of all FinTechs had at least one woman in their payroll, and Colombia represents one of the best in Latin America with opportunities for women to work in FinTech, i.e., 16 percent of the FinTech start-ups had at least 50 percent of women in their payroll, as suggested by evidence by IDB et al. (2018) and FinteChile and EY (2021)[175]. Examples of FinTech companies led by women include Kiphu, which provides lending services for micro and small businesses. Likewise, TowerTech Americas provides

[175] https://mpra.ub.uni-muenchen.de/109373/1/MPRA_paper_109373.pdf

electronic payment services. Another notable example is Alfore, a company led by a woman and dedicated to lending to micro-entrepreneurs and unbanked individuals.

7.4.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Colombia

The new regulatory Sandbox implemented on September 14, 2020, can help foster innovation in the FinTech industry in Colombia. The creation of this regulatory sandbox called the Control Trial Environment (Espacio Controlado de Prueba) reaffirms its commitment to promoting innovative financial solutions that contribute to its economic growth, strengthen and reduce costs in the financial ecosystem and increase the efficiency and quality of and access to financial products and services.[176] The Control Trial Environment (CTE) allows for the testing of FinTech projects that seek to accomplish (i) the Increase efficiency in financial products or services; (ii) Solve a problem for financial consumers; (iii) Increase access and coverage of financial products and services; (iv) Facilitate or promote regulatory compliance; or (v) Stimulate competitiveness in financial markets.

The CTE permits a maximum testing period of 2 years and requires that all participating projects be tested in Colombia. The temporary operating license issued by the Finance Superintendence may be valid for an initial period of up to two years, and if shorter, may be renewed for a total period not exceeding two years.

7.4.7 The Impact of COVID-19 on FinTech Services

Since the onset of the COVID-19 pandemic, the use of technologies in financial services has increased, in part due to a desire to avoid physical currency, as well as the creation of easier and faster payment processes for end-users. Contactless payments by credit cards, debit cards and mobile phones have seen rapid growth during the last year. According to a study by Mastercard, contactless payments in Colombia have grown by 19 percent. The use of cash has been reduced to 62 percent, there is a surge of digital credit cards[177]. These services have seen a surge in users during the pandemic, mostly because the government is using them to disperse large amounts of Covid-19 stimulus money and welfare payments. This trend most likely will continue to increase in the near future due to the pandemic's impact.

The FinTech ecosystem grows and becomes more relevant day by day. For instance, the government is using FinTech to irrigate resources to vulnerable populations as part of its plan to counter the effects of COVID-19. Moreover, since lockdown, Colombian banks have simplified money borrowing processes, offering easier online consumer loans, less and more accessible requirements, and faster outlays which has led to growing alliances between

[176] Willkie Farr & Gallagher LLP | willkie.com
[177] https://cms.law/en/int/expert-guides/FinTech-in-latin-america/colombia

traditional banks and incumbents and therefore, consumer perceptions of online banking are shifting.

7.4.8 Emerging FinTech Companies in Colombia

Colombia features a young market, with most of recently created startups (43 percent were launched within the past 2-5 years and 34 percent are younger than 2 years), while only 23 percent have over 5 years of experience[178]. We have handpicked six Colombian startups that are innovating the financial technology sector in Latin America. They truly show the Colombian ecosystem's evolution, which is characterized by its creativeness, dynamism and entrepreneurship.

Table 20: Emerging FinTech Companies in Colombia

Name of Company	Services
Sempli	A lending platform for small and medium enterprises (SMEs)
AlphaCredit	A lending platform for small and medium enterprises (SMEs)
Bold	This startup offers a financial services solution for Colombian SMEs and entrepreneurs.
PayU	Offers a payment tool to online merchants. This platform allows online businesses to accept and process payments through payment methods that can be integrated with web and mobile applications.
Mesfix	Crowd factoring and online invoice receivable marketplace in Colombia.
Khipu	Specialized in Lending for individuals and SMEs

[178] Panamericanworld - https://panamericanworld.com

7.5 Hong Kong, China

7.5.1 DFS Context and Trends

FinTech in Hong Kong, China has seen significant growth in recent years. Home to over 600 FinTech firms, including over 10 unicorns[179], Hong Kong, China has established itself as a FinTech hub in the Asia-Pacific region, ranking in the top 10 FinTech locations of the future.[180] Between 2014 and 2018, FinTech startups in Hong Kong, China raised USD 1.1 billion while FinTech investment in 2019 doubled to USD 374 million.[181] In 2022, the city ranks third after New York and London in the latest Global Financial Centres Index and eighth for fintech ranks and rating, which was produced by the China Development Institute and the London think tank Z/Yen Partners.[182] This growth may have been fostered by government agencies such as the Hong Kong Monetary Authority (HKMA), the city's central bank, in line with its Smart City initiative to integrate innovation and technology into all aspects of life in Hong Kong, China.

Figure 30: GFCI 31 Top Ranks and Ratings

Global Financial Centres Index 31

Table 1 | GFCI 31 Top Ranks And Ratings

Centre	GFCI 31		GFCI 30		Change In	Change In
	Rank	Rating	Rank	Rating	Rank	Rating
New York	1	759	1	762	0	▼3
London	2	726	2	740	0	▼14
Hong Kong, China	3	715	3	716	0	▼1
Shanghai	4	714	6	713	▲2	▲1
Los Angeles	5	713	7	712	▲2	▲1
Singapore	6	712	4	715	▼2	▼3
San Francisco	7	711	5	714	▼2	▼3
Beijing	8	710	8	711	0	▼1
Tokyo	9	708	9	706	0	▲2
Shenzhen	10	707	16	699	▲6	▲8

Source: Global Financial Centers Index 31

The FinTech sector in Hong Kong, China has grown and developed into several major areas. They include virtual banking, insurance technology, asset management, robo-advisory, blockchain, digital trading, payments, and regtech. Digital payments is expected to be the largest segment with a total transaction value of around USD 19 billion in 2022, while the

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[179] A unicorn is a start-up with at least a billion-dollar valuation

[180] Leung, King (2020). *Hong Kong, China: Generational opportunities await for fast-rising FinTech talent.* FinExtra. Retrieved from https://www.finextra.com/blogposting/20022/hong-kong-generational-opportunities-await-for-fast-rising-FinTech-talent

[181] *Hong Kong, China: The FinTech Fast Track* (n.d.). CNBC. Retrieved October 20, 2021, from https://www.cnbc.com/advertorial/hong-kong-the-FinTech-fast-track/

[182] https://www.longfinance.net/media/documents/GFCI_31_Report_2022.03.24_v1.0.pdf

Digital Investment segment is expected to show a revenue growth of 47.1% in 2023, according to Statista.

Figure 31: Main Areas of the FinTech Sector in Hong Kong, China

Source: Hong Kong, China Institute for Monetary and Financial Research HKIMR Applied Research Report No. 1/2020

7.5.2 The FinTech Ecosystem in Hong Kong, China

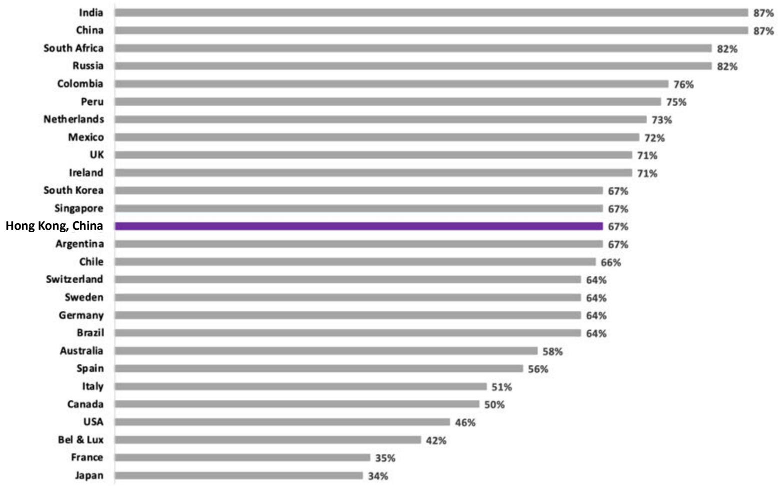
7.5.2.1 Main Actors in the FinTech Ecosystem

There are 5 main actors in the FinTech ecosystem in Hong Kong, China: i) FinTech Firms; ii) FinTech Collaborators; iii) Regulatory Authorities iv) FinTech Financiers v) FinTech Consumers. The first is the FinTech firms themselves, which leverage innovative technologies like blockchain and artificial intelligence to provide financial services. FinTech collaborators may be traditional financial institutions or large technology companies who are looking to incorporate FinTech services into their operations. This may be done through collaborations with existing FinTech, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. Third are the regulatory authorities that oversee the activities of firms operating in the finance and technology space, such as the Hong Kong Monetary Authority (HKMA), as well as regulators that are involved in all forms of business, such as consumer protection authorities and employee rights regulators. The fourth actor group is the financiers that invest in the growth of FinTech firms. This includes venture capitals, angel investors, incubator funds, as well as financial support programs from the government. The final actor is the end consumer of FinTech services, which could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.5.2.2 FinTech Usage

FinTech usage has increased significantly and may be poised for even greater growth. According to the EY Global FinTech Adoption Index 2019,[183] Hong Kong, China had a FinTech adoption rate[184] of 67 percent, more than double its rate from 2017 and equal to Singapore and Korea, but lower than China and India (both 87 percent). The figure below shows that the adoption rates for 27 economies, including Hong Kong, China. As more government initiatives in support of FinTech come online, FinTech usage is expected to increase even further. Under the HKMA FinTech 2025 plan, the central bank includes an "All Banks Go FinTech" initiative that encourages all banks to fully digitize operations. One stakeholder described the Commercial Data Interchange (CDI), a platform for the consented sharing of commercial data between banks and data providers and part of the FinTech 2025 plan, as "a breakthrough" as it allows banks to access different types of alternative data with consent.

Figure 32: FinTech Adoption Rates



Source: EY Global Findex Adoption Index 2019

7.5.3 FinTech Regulatory Framework

7.5.3.1 Key Regulatory Actors

HKMA, the main regulatory body of financial institutions and the Central Bank of Hong Kong, China, has assumed the responsibility of regulating FinTech activities. HKMA established the FinTech Facilitation Office in 2016 to help improve the industry's understanding about the parts of the regulatory landscape which are relevant to them, and to facilitate regulatory development and communication with FinTech ecosystem actors.

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[183] *Global Findex Adoption Index* (2019). Ernst & Young. Retrieved from https://www.ey.com/en_gl/ey-global-FinTech-adoption-index

[184] The adoption rate is the number of FinTech adopters as a percentage of the digitally active population, where a FinTech adopter is someone who has used two or more major FinTech services in the last six months

FinTech firms will also be regulated by various other regulatory bodies depending on the services that they provide. The table below outlines the key regulatory actors and their responsibilities.

Table 21: Key Regulators for FinTech Services in Hong Kong, China

Regulatory Actors	Description
Hong Kong Monetary Authority (HKMA)	Acts as the central bank and the overseeing authority for banking-related services. Responsible for developing key infrastructures such as the Faster Payment System and pioneering initiatives such as the Open Application Programming Interface (API) Framework. Also issues virtual banking licenses and oversees compliance with AML/CFT
Securities and Futures Commission (SFC)	SFC has established the Fintech Contact Point to enhance communication with businesses involved in the development and application of Fintech which intend to conduct regulated activities under the Securities and Futures Ordinance (SFO) in Hong Kong, China. Responsible Fintech sectors include virtual assets trading and robo-advisory services.
Insurance Authority (IA)	IA has established the Insurtech Facilitation Team to enhance the communication with business involved in the development and application of Insurtech in Hong Kong, China, as well as to promote Hong Kong, China as an Insurtech hub in Asia.
Customs and Excise Department	Money Service Operator (MSO) license allows to provide a money service in Hong Kong, China either a money changing service and/or a remittance service.
Companies Registry (CR)	Processes and stores business incorporation information and licensing applications for moneylenders
Office of the Privacy Commissioner for Personal Data	Oversees the implementation of and compliance with the provisions of privacy laws
Cyber Security and Technology Crime Bureau of the Hong Kong Police Force	Handles cyber security issues and carries out technology crime investigations

7.5.3.2 Regulations Related to FinTech Services

Although there are no laws that are specific to FinTech in Hong Kong, China, some existing regulations have been adapted to account for FinTech services. For instance, the Payment Systems and Stored Value Facilities Ordinance is an amendment of the previous Clearing and Settlement Services Ordinance (CSSO) which was introduced to keep up with the innovations in payment services. Similarly, the Government of Hong Kong, China has announced that a virtual asset service provider licensing regime would be implemented for crypto-asset activities conducted on exchanges by amending the Anti-Money Laundering and Counter-Terrorist Financing Ordinance. HKMA, IA, and SFC all have designated FinTech offices within their agencies that provide support to the FinTech industry. All of these organizations also developed a regulatory sandbox to provide a safe environment for testing FinTech solutions without the typical regulatory restrictions.

Table 22: Key Regulations Related to FinTech in Hong Kong, China

Key Area of Regulation	Regulation Name	Details
Virtual Banking	Banking Ordinance	The Banking Ordinance, under the purview of HKMA, oversees the regulation of digital banks and the issuing of virtual banking licenses
PayTech, Cryptocurrency	Payment Systems and Stored Value Facilities Ordinance	Regulates the activities and licensing of payment service providers and use and sale of stored value facilities[185]
Cryptocurrency, P2P lending, Robo-advisory	Securities and Futures Ordinance	Regulates activities and actors involved in securities and derivatives as well leveraged foreign exchange trading
InsureTech	Insurance Ordinance	Provides requirements for FinTech firms providing insurance services
Alternative lending (excluding P2P lending)	Moneylenders Ordinance	Regulates lending, credit bureau activities, and use of borrower information and data
General	Personal Data (Privacy) Ordinance	Regulates business activities regarding customer's data
General	Anti-Money Laundering and Counter-Terrorist Financing Ordinance (AMLO)	Sets out Anti-Money Laundering/Counter-Terrorism Financing (AML/CFT) protocols for businesses to follow

[185] Stored value facilities include any facility that holds the value of money accepted by the facility and can be used for payments. This may include crypto assets and virtual assets.

Data Protection	Personal Data (Privacy) Ordinance	Data subject rights, specific obligations to data controllers, and regulates the collection, processing, holding, and use of personal data

7.5.4 FinTech & SMEs

7.5.4.1 The SME Sector in Hong Kong, China

SMEs are a significant section of the Hong Kong, China economy. SMEs make up the vast majority of businesses in Hong Kong, China. Over 98 percent of businesses in Hong Kong, China are small or medium enterprises and employ about 45 percent of private-sector workers.[186] These firms are a significant contributor to Hong Kong, China's GDP, contributing over 50 percent of GDP as of 2012.[187] As such, the success of SMEs is crucial for economic stability and prosperity in Hong Kong, China.

SMEs in Hong Kong, China struggle with costs, cyber-security, cash flow, and financing. Research by the Support and Consultation Centre for Small and Medium Enterprises (SUCCESS) estimates the SME credit gap at USD 12.86 billion.[188] Global Business Monitor 2019 Survey also found that SMEs primarily struggle with rising overhead costs and cash flow, particularly with late payments from customers.[189] The survey found that Hong Kong, China SMEs waited an average of 34 days to receive payments. This was the second-longest average waiting period among surveyed regions. As SMEs begin to digitize, they have also become more concerned about cyber-security threats. A separate study by QBE Insurance found that 61 percent of surveyed SMEs were concerned about theft or loss of consumer data.[190]

7.5.4.2 FinTech-Based Financial Inclusion of SMEs

Hong Kong, China SMEs looking to virtual banks for improved financial services. Evidence suggests that SMEs in Hong Kong, China are open to reconsidering their financial services

[186] *SMEs & Industry – Support to Small and Medium Enterprises* (n.d.). Trade and Industry Department-The Government of the Hong Kong, China Special Administrative Region. Retrieved October 19, 2021, from https://www.tid.gov.hk/english/smes_industry/smes/smes_content.html

[187] *Connected Hong Kong, China SMEs – How Hong Kong, China small businesses are growing in the digital economy* (2014). Ipsos Business Consulting. Retrieved October 19, 2021, from https://www.ipsos.com/sites/default/files/2017-07/Connected-HKSMEs_Report_10-Feb-2014.pdf

[188] *Virtual Banking for SMEs* (2021). InvestHK – The Government of the Hong Kong, China Special Administrative Region. Retrieved October 19, 2021, from https://www.investhk.gov.hk/en/case-studies/virtual-banking-smes.html

[189] Dib, Georges & Stamer, Manfred. (n.d.) *Cashflow remains a key challenge for Hong Kong, China SMEs, even with improved government support.* Euler Hermes. Retrieved October 20, 2021 from https://www.eulerhermes.com/en_global/APAC/newsroom/press-releases/cashflow-remains-a-key-challenge-for-hong-kong-smes--even-with-i.html

[190] *Economic Pessimism Blinding HK SMEs To Cyber Risk Protection* (2021). CDO Trends. Retrieved October 20, 2021, from https://www.cdotrends.com/story/15367/economic-pessimism-blinding-hk-smes-cyber-risk-protection?refresh=auto

provider and are willing to switch institutions. A report from EY found that 48 percent of Hong Kong, China SMEs were willing to switch their financial services provider, compared to the study average of 36 percent. Among these, 39 percent reported that they were willing to switch to FinTech service providers.

The growth of payment FinTech will allow SMEs to take advantage of the geographical benefits of Hong Kong, China. The fast-emerging Greater Bay Area, a city cluster development including Hong Kong, China, with a population of over 86 million and total GDP of USD 1.68 trillion, gives SMEs in Hong Kong, China access to markets that would ordinarily not be available.[191] It is also a regional hub for multinational enterprises. FinTech firms such as Airwallex and Neat have developed platforms to handle the various issues involved in regional and cross-border trade, including business registration, facilitating payments, and foreign exchange conversions.

FinTech firms are also positioned to solve the financing problems of SMEs in Hong Kong, China. The Global Business Monitor 2017 reported that 48 percent of Hong Kong, China SMEs seeking financing identified proper documentation and paperwork as the main obstacle for obtaining financing. FinTech firms have developed alternative lending solutions that rely less on these typical loan documents to determine creditworthiness. HKMA has recognized the potential for this solution to extend credit to previously unqualified SMEs and has released a white paper as guidance on implementing these alternative scoring methods.

7.5.4.3 Regulations Affecting the SME Sector and FinTech Services

Technology use restrictions limit FinTech firms' ability to adequately serve SMEs. A key stakeholder with industry knowledge also identified a lack of common standards on e-signatures as an area for improvement in the regulatory framework. Clearer standards will ensure that business conducted solely online is still legally binding and verifiable.

7.5.5 Gender-based Impact of FinTech Financial Inclusion

Women-led SMEs enjoy favorable conditions for business in Hong Kong, China. Hong Kong, China ranked seventh in the 2019 Mastercard Index for Women Entrepreneurship[192] while 48 percent of all SMEs are led by women entrepreneurs. [193] According to the World Bank Global Findex Database[194] , 96 percent of men and 95 percent of women in Hong Kong, China have

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[191] https://www.bayarea.gov.hk/en/about/overview.html
[192] *The Mastercard Index of Women Entrepreneurs 2020* (2020). Mastercard. Retrieved from https://www.mastercard.com/news/media/1ulpy5at/ma_miwe-report-2020.pdf
[193] *Open for Business: SME Landscape and Female Founders in Hong Kong, China* (2021). Visa – Hong Kong, China. Retrieved from https://www.visa.com.hk/dam/VCOM/regional/ap/hongkong/global-elements/documents/20210201-visa-report-final.pdf
[194] Demirguc-Kunt, A., Klapper, L., Singer, D., & Ansar, S. (2018). *The Global Findex Database 2017: Measuring financial inclusion and the FinTech revolution*. World Bank Publications.

bank accounts. Eighty-six percent of men made or received digital payments in the last year, compared to 83 percent of women. However, 13 percent of men borrowed from a financial institution, compared to only 5 percent of women. A market study by Visa may explain some of this variation as a recent report found that women entrepreneurs are more likely to use government grants than men.

7.5.6 Common Practices and More Innovative or Emerging Approaches on Fintech Financial Inclusion in Hong Kong, China

Hong Kong, China SMEs are slowly embracing FinTech solutions for financing but have cyber-security concerns. The 2019 Global Business Monitor found that 26 percent of SMEs were receptive to using innovative external sources of financing, which is a 10 percentage points increase from 2017 levels. In particular, 32 percent were open to using invoice factoring as a financing source while 29 percent would consider peer-to-peer (P2P) lending. Among those who would not consider innovative financing solutions, 33 percent cited data security as their main concern. Our stakeholder responses also expressed the same sentiment, indicating that there is a desire for a more specific data sharing and privacy policy.

Similar concerns exist for use of virtual banks, but research shows that Hong Kong, China consumers are embracing this new banking option. A recent study[195] in Hong Kong, China showed that 38 percent of respondents did not trust virtual banks with personal data and 33 percent did not believe that these banks are financially viable. However, a 2019 PWC Digital Banking survey[196] found that more than half of the respondents in Hong Kong, China were interested in opening virtual bank accounts. Similarly, a 2020 Google survey[197] estimated that there would be 1.8 million Hong Kong, China virtual bank account users by 2025. The Hong Kong, China virtual banks are estimated to capture almost a quarter of the Hong Kong, China populace by 2025, yielding around USD 71 billion in deposits. [198]

7.5.7 The Impact of COVID-19 on FinTech services

Despite COVID-19, FinTech in Hong Kong, China has continued to expand. The US International Trade Administration[199] estimated that Finance and FinTech exports will

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[195] Lee, E. (2021). Digital Financial Inclusion: Observations and Insights from Hong Kong, China's Virtual Banks. *Law and Contemporary Problems*, *84*(1), 95-113.

[196] Harjeet Baura, (2019). *Virtual Banking: Customers Take Charge – Are You Ready?*. PRICEWATERHOUSECOOPERS, Retrieved from https://www.cnbs.gob.hn/wp-content/uploads/2019/11/PwC-Virtual-Bank-Survey-Nov-2019.pdf

[197] Susannah Binsted (2020), *The Rise of Virtual Banks*, FINDER. Retrieved from https://www.finder.com/ hk/virtual-banking-statistics https://perma.cc/8LM9-2U7Y

[198] Quinlan Benjamin, Trehan Eashan (2021). *Hong Kong's Virtual Banks Current Positioning and Future Outlook.* Retrieved from https://www.quinlanandassociates.com/insights-hong-kong-virtual-banks-current-positioning-and-future-outlook/

[199] *Hong Kong, China Country Commercial Guide: Leading Sectors for US Exports & Investments – Finance and FinTech* (n.d). US International Trade Administration. Retrieved October 20, 2021, from https://www.trade.gov/country-commercial-guides/hong-kong-finance-FinTech

increase from about USD 27 billion in 2019 to over USD 30 billion in 2020. The first virtual bank in Hong Kong, China, ZA Bank, has gained over 500,000 users with over USD 892 million in deposits as of December 2021and seven others followed even as infection levels rose globally. In 2020, HKMA also intensified its digital currency research process by exploring business use cases after already developing proof-of-concept prototypes. From all actors, FinTech growth seemed to maintain pace with pre-pandemic levels.

7.5.8 Emerging FinTech Companies in Hong Kong, China

As one of the world's leading financial centers, Hong Kong, China has evolved into a prime location for the fast-growing FinTech sector in just a few years. We have selected a few emerging startups that are innovating the financial technology sector in Hong Kong, China. They truly show the ecosystem's evolution, which is characterized by its creativeness and dynamism.

Table 23: Emerging FinTech Companies in Hong Kong, China

Name of Emerging FinTech Company	Brief Details
AirWallex	- AirWallex is a cross-border payments FinTech that offers business banking services and payment transfer services to businesses to send and receive payments for services across economies. - AirWallex is valued at USD 4 billion - As regional FinTech hubs begin to integrate payment systems and digital agreements are signed, FinTech firms like AirWallex will only grow stronger from access to a larger market
WeLab	- WeLab provides an online banking platform that provides a range of typical banking services, including loans and debit cards - WeLab was valued at over USD 1 billion in 2017 but plans an IPO that would put its valuation at closer to USD 2 billion - The introduction of virtual banking license led to the beginning of WeLab operations and further initiatives to democratize customer data within financial institutions will allow FinTech banks like WeLab to truly compete with the traditional financial institutions
Neat	- Neat is a payment platform that integrates with other FinTech service providers to act as a one-stop-shop for all customer needs in conducting business internationally, including business registration and opening a bank account - Neat is valued at USD 2.6 billion, making it a unicorn - Its multi-currency accounts take only 15 minutes to open and a few days to process, and then any business can operate in any economy that Neat services. As Neat expands to more economies, it provides SMEs the easiest route to also take their business global

CXA	- CXA is an employee ecosystem for health and wellness that allows businesses to redirect part of their healthcare costs to personalized benefits and wellness programs, allowing employees to mix and match their insurance and benefits - CXA announced plans to raise USD 50 million, which would put its valuation at USD 250 million[200] - CXA has 45 Fortune 100 companies as clients and has announced recent expansions into Chinese cities like Shanghai and Beijing

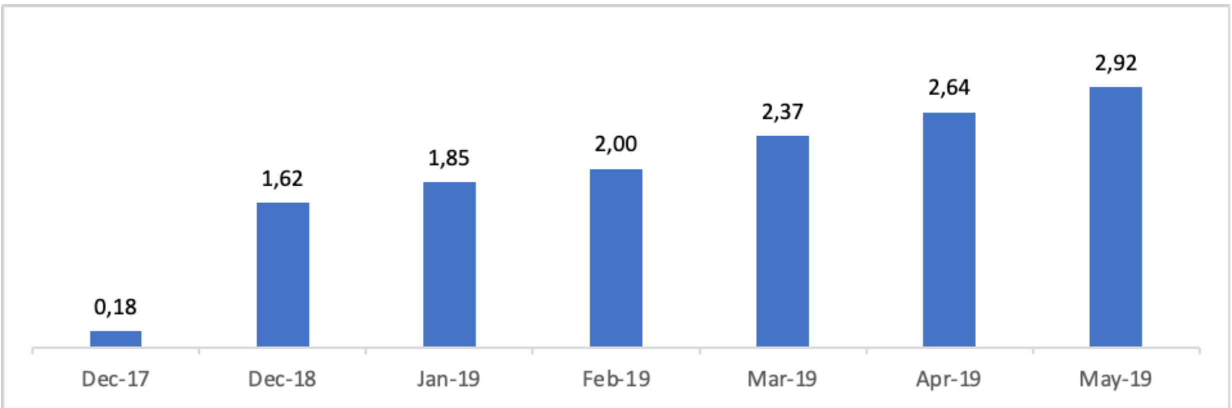
[200] Cxagroup https://www.cxagroup.com/Tech-in-Asia-scaling-fast-healthtech-startup-aims-hit-1b-valuation

7.6 INDONESIA

7.6.1 DFS Context and Trends

The FinTech sector is highly present in Indonesia and growing steadily. In 2020, there were around 322 FinTech companies[201] as opposed to 249 companies in 2019[202], with around a 30 percent increase in one year. The lending FinTech sector is the largest in the economy and it has increased its lending from USD 0.18 billion in December 2017 to USD 2.92 billion in May 2019. In addition, according to the Bank of Indonesia, the value of e-money transactions increased by 6 times between 2012 and 2017 to USD 840 million.[203] Since 2019, it is estimated that there are more than 6.2 million agents (individuals and kiosk-based) that work with FinTech companies.[204]

Figure 33: Total P2P Lending



Source: MSC "Cash-In Cash-Out Cross-Country Analysis: INDONESIA"

In parallel to this growth, the government has been highly supportive of the development of the FinTech sector in Indonesia. The Bank of Indonesia (BI) and Financial Services Authority have been issuing regulations since 2013 to help FinTech businesses grow and develop in an adequate regulatory framework such as the E-Money regulations released by Bank Indonesia in 2013.[205] In addition, the government advocates for collaborations between the different stakeholders (FinTech, Banks, Platforms) to boost Financial Inclusion in the economy. In 2020,

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[201] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/.
[202] Source: ADBI (2019) "FINTECH DEVELOPMENT AND REGULATORY FRAMEWORKS IN INDONESIA","https://www.adb.org/sites/default/files/publication/532761/adbi-wp1014.pdf"
[203] Ibid
[204] Source: MSC "Cash-In Cash-Out Cross-Country Analysis: INDONESIA" December 2020 https://www.microsave.net/2021/01/08/cash-in-cash-out-cross-country-analysis-indonesia/
[205] Ibid

the financial inclusion rate in Indonesia reached 76 percent[206] which is high for a developing economy and the government aims to reach 90 percent by the year 2022.[207]

However, the industry is still facing some challenges regarding to financial literacy and connectivity. The financial literacy rate in 2019 was 38 percent, this potentially is a barrier to the adoption of FinTech services.[208] Around 83 million individuals (around 40 percent of the population) did not have a bank account in 2020[209]. Outside of big cities and towns in the major islands, FinTech firms do not offer support or liquidity management. Outside Java and Sumatra, the penetration of basic savings account (BSA) is significantly lower.[210] In 2020, both the Smartphone penetration and the internet penetration are average, respectively, at 60 percent and 67 percent of the population.[211]

7.6.2 The FinTech Ecosystem in Indonesia

7.6.2.1 Main Actors in the FinTech Ecosystem

There are 5 main actors in the FinTech ecosystem in Indonesia: i) FinTech Firms; ii) FinTech Collaborator; iii) Regulators; iv) Financiers and v) End-consumer of FinTech solution. The first is the FinTech firms themselves who offer the different FinTech solutions in the market such as EsPay and Ovo. FinTech collaborators may be traditional financial institutions or large technology companies who are looking to incorporate FinTech services into their operations or promote these services. This may be done through collaborations with existing FinTech, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. For example, banks as Mandiri and Danamon and platforms such as Tokopedia are in collaborations with different FinTech players to boost financial inclusion[212]. Third are the regulatory authorities that oversee the activities of firms operating in the finance and technology space as well as more general regulators such as the Bank of Indonesia and the Financial Services Authority. The fourth actor group is the financiers that invest in the growth of FinTech firms where local and foreign investors have poured millions into FinTech start-ups in 2019/2020 such as Goat Capital. The final actor is the end consumer

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[206] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/.

[207] Asian Development Bank. (2021, February 12). *USD500 million ADB loan to expand financial inclusion in Indonesia*. Asian Development Bank. Retrieved November 2, 2021, from https://www.adb.org/news/500-million-adb-loan-expand-financial-inclusion-indonesia.

[208] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/ .

[209] Ibid

[210] MSC "Cash-In Cash-Out Cross-Country Analysis: INDONESIA" December 2020 https://www.microsave.net/2021/01/08/cash-in-cash-out-cross-country-analysis-indonesia/

[211] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/ .

[212] Ibid

of FinTech services, which could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.6.2.2 FinTech Usage

The Indonesian population is adopting to FinTech however there exist challenges and inequality. In Indonesia, to the best of our knowledge, there aren't any statistics that directly specify FinTech usage by consumers however we can investigate the usage across different proxies (e-commerce and mobile banking. Around 54 percent of Internet users use mobile banking services in Indonesia.[213] In addition, 88 percent of the internet users have adopted E-commerce and spent around USD 111 on online purchases of consumer goods in 2019.[214] However, FinTech payment options for both in-person and online transactions are still not widely available at merchants.[215] If they do offer an option, consumers will have to pay an extra percentage for the transaction.[216] In rural areas, FinTech adoption is low as well as outside the main island of Java and Sumatra.[217]

7.6.3 FinTech Regulatory Framework

7.6.3.1 Key Regulatory Actors

The supervision and enforcement of the FinTech Provisions are entrusted to two authorities, depending on the services the companies provide to their customers. The Financial Services Authority (OJK) regulates the provision of FinTech products and services other than those related to payment services, while the Bank of Indonesia (BI) regulates all FinTech products and services related to payment services:

Table 24: Key Regulatory Actors in Indonesia

Regulator	Role
Bank of Indonesia (BI)	The BI is the Central Bank of Indonesia. BI regulates FinTech engaged in payment system services, these regulations include mandatory registration with the BI and managing the regulatory sandbox
Financial Services Authority (OJK)	The Indonesian Government Agency regulates and supervises the financial services sector. OJK regulates all FinTech that provides financial services, such

[213] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/
[214] Ibid
[215] International, P. T. C. B. (2021, July 2). *Fintech in Indonesia: The Opportunities & Growth [2021 updated]*. Fintech in Indonesia: The Opportunities & Growth [2021 Updated]. Retrieved November 2, 2021, from https://www.cekindo.com/blog/FinTech-indonesia
[216] Idib
[217] MSC "Cash-In Cash-Out Cross-Country Analysis: INDONESIA" December 2020 https://www.microsave.net/2021/01/08/cash-in-cash-out-cross-country-analysis-indonesia/

	as digital banking, P2P lending, crowdfunding, insure-tech, investment, and market aggregators.

7.6.3.2 Regulations Related to FinTech services

Indonesia has introduced multiple key regulations to assist FinTech companies to develop in the economy. The government is highly supportive of financial innovation. The regulations highlight the existence of a regulatory sandbox process and enhance responsible finance innovation, data security, good governance, customer protection, and anti-money laundering/ anti-terrorism. In addition, they cover different FinTech solutions such as e-money, P2P Lending, Crowdfunding, and Payment Services.

Table 25: Regulations Related to FinTech services in Indonesia

Key Area of Regulation	Regulation Name	Details
Digital banking	OJK Regulation No.12/POJK.03/2018	Regulation on the use of information technology for FinTech banks (and other types of banks) engaged in digital banking. All banks that wish to issue electronic/digital products must request permission from OJK. Banks must emphasize product innovation, cooperation with partners, and digital processes to ensure better services for customers and effective risk management.
General	Bank of Indonesia Regulation No.19/10/PBI/2017	The regulation is intended to support the FinTech ecosystem and the Indonesian economy, in particular companies in payment businesses. FinTech providers are obliged to register at the Bank of Indonesia and cannot use digital currency. They will be tested in the regulatory sandbox for around a year before they may apply for a license (to operate their business)
Digital Financial Innovation	OJK Regulation No.13/POJK.02/2018	Any FinTech companies that are not yet regulated by other authorities must apply to OJK to go through the regulatory sandbox process and get registered. This allows the OJK to review the FinTech solution introduced including the methodology, test it in the market and evaluate it. In the end, it recommends ways of improvement of the product or if it's feasible.
P2P Lending	The OJK issued Regulation POJK 77/2016 on Information Technology- Based Lending Services (POJK 77/2016	The regulation is directed to support the growth of FinTech P2P lending platforms. It introduces various guidelines, restrictions, and obligations for FinTech companies engaged in P2P lending.

Crowdfunding	OJK Regulation No. 37/POJK.04/2018	Defines equity crowdfunding. It allows FinTech companies providing crowdfunding services to provide access to SMEs in raising funds for the development of their businesses by selling shares to the public
Payment Services	*PBI No. 20/6/PBI/2018 on Electronic Money*	The regulation is intended to accommodate the development of the business model of FinTech engaged in e-money. The institutional capacity of e-money issuers is enhanced, including capital and ownership composition.
Open banking	Consultation Paper (CP) regarding Open API Standards	Pushed the financial industry to develop open banking. BI is aware that API would be able to boost the digital economy. However, it is an initiative not yet implemented.
Credit Scoring	on OJK Regulation No. 18/POJK.03/2017	Financial Information Services System (SLIK) collects and records credit or loan facility data submitted to the OJK to generate the credit information status of a person. FinTech companies, specifically P2P lending companies, may become credit reporting companies upon obtaining approval from the OJK
General	Presidential Regulation No. 74 (2017)	Regulates, cybersecurity, logistics, taxation, human resource development, and consumer protection

7.6.4 FinTech & SMEs

7.6.4.1 The SME Sector in Indonesia

The Indonesian business market is dominated by Micro-enterprises. Around 98.6 percent of all enterprises in Indonesia are Micro-enterprises, the SME sector represents only 1.35 percent of the market, and large enterprises represent 0.01 percent.[218] The MSME sector employs 97 percent of workers in the economy, thereby representing 61 percent of the economy's GDP.

[218] Noting this information for the rest for the rest of Indonesia will focus on the relation of the MSME sector and FinTech since the SME sector is significantly small

Table 26: SME Overview in 2019

Firm size (employees)	Number	Percent
Micro-enterprises (yearly turnover under IDR 300 million)	63,350,222	98.677 %
Small enterprises (early turnover between IDR 300 million and IDR 2.5 billion)	783,132	1.220 %
Medium-sized enterprises (yearly turnover between IDR 2.5 billion and IDR 50 billion)	60,702	0.095 %
Large enterprises (yearly turnover above IDR 50 billion)	5,550	0.009 %

Source: OECD

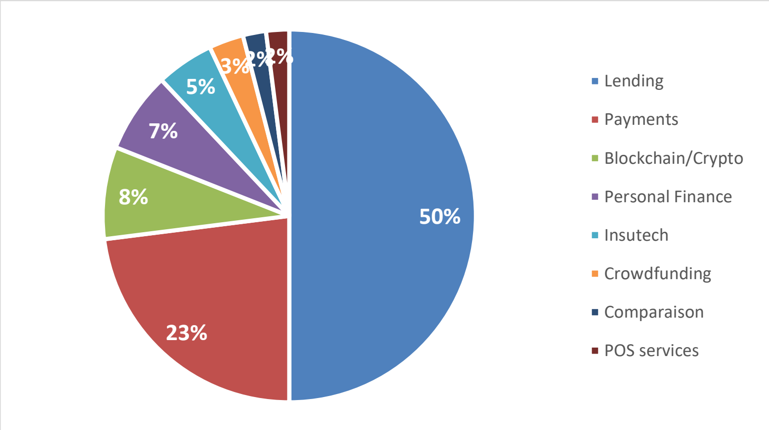
The Indonesian MSMEs are finding it more difficult to access finance through the banking system. A survey conducted by Pricewaterhouse Coopers in 2019, disclosed that 74 percent of Indonesian MSMEs have not received access to finance.[219] The World Bank and International Finance Corporation estimated that the credit gap for MSMEs in Indonesia reached USD 165 billion (or 19 percent of the gross domestic product), while the current availability is only USD 57 billion. MSMEs are finding it difficult to obtain additional capital from banks because they are incapable to meet statutory requirements for the loan[220]. Another problem often faced by MSMEs is inefficient cash transactions and payments through traditional banks. Cash transactions are more common among MSMEs than low non-cash transactions, which are 0.6 percent of total non-cash retail transactions.[221]

7.6.4.2 SMEs FinTech Financial Inclusion

The FinTech services available for SMEs in Indonesia are mainly concentrated on lending and payments. Around 50 percent of all FinTech businesses in the economy are online lending FinTechs, and 23 percent are specialized in FinTech payment solutions. In addition, 8 percent of FinTech enterprises are blockchain/crypto, followed by 7 percent for personal finance, 5 percent insurtech, 3 percent crowdfunding, and 2 percent for both comparison and POS services.

[219] Suryanto, Suryanto & Tahir & Dai, Ratna. (2020). FINTECH AS A CATALYST FOR GROWTH OF MICRO, SMALL AND MEDIUM ENTERPRISES IN INDONESIA.
[220] Ibid
[221] Ibid

Figure 34: Types of FinTech Enterprises in the Indonesian Ecosystem



Source: FinTech-Indonesia Report 2020

The FinTech sector is potentially a financial solution to the challenges of MSMEs. A study by Suryant et al (2020)[222] states that the FinTech sector can act as a "catalyst" to the growth of companies especially the services of Peer to Peer (P2P) Lending platform, equity crowdfunding (ECF), e-wallet, and personal finance. In addition, they find FinTech companies help MSMEs access financing sources, and digital payments, expand market share, and overcome financial reporting problems. In 2020, at least 54 percent of borrowers of P2P Lending were MSMEs[223]. The sector of P2P Lending is especially concerned about the growth of MSMEs, it can help them scale up their business and qualify for bigger bank loans[224]. In addition, it was found that borrowers of online sellers that borrowed from the P2P lending platform were able to increase their income from USD 57,000 to USD 247,000[225].

7.6.4.3 Regulations Affecting the SME Sector and FinTech Services

The different financial solutions available to MSMEs can be accessible and tested in the regulatory sandbox regulated by the BI. As mentioned earlier, the BI supports FinTech through a regulatory sandbox that assists FinTech companies to improve their FinTech solutions and test them in the market. With this regulation, the MSME sector can access different FinTech solutions, especially in lending to test it. The MSME sector can find the best FinTech solution suited for their business, access a diverse range of loan products, and present

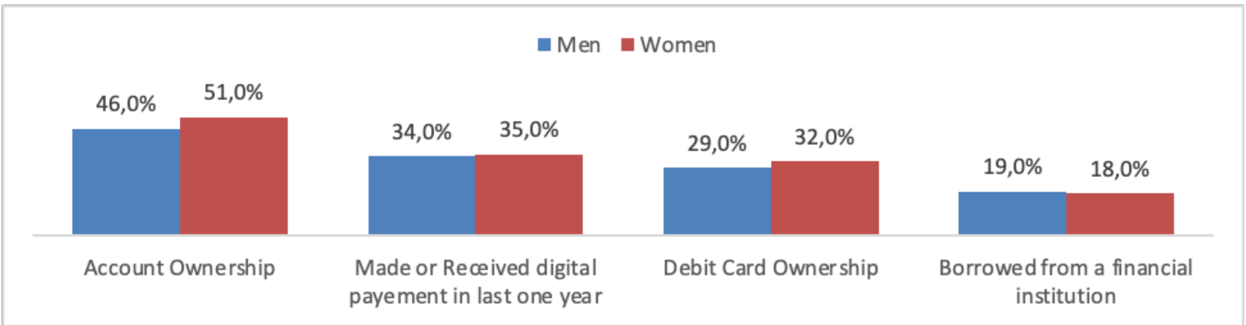
[222] Dai, R. M. (2020). FinTech As A Catalyst For Growth Of Micro, Small And Medium Enterprises In Indonesia. *Academy of Strategic Management Journal*, *19*(5), 1-12.
[223] The conversation, "How fintech can help Indonesia's small and medium enterprises survive the COVID-19 pandemic" https://theconversation.com/how-FinTech-can-help-indonesias-small-and-medium-enterprises-survive-the-covid-19-pandemic-148528
[224] Ibid
[225] Ibid

feedback on the product.[226] The latter feedback can assist FinTech companies to improve their product.

7.6.5 Gender-based Impact of FinTech Financial Inclusion

Women and men are not highly involved in the financial services offered in the economy and there are no significant differences between them according to the Global Findex Database 2017. Around 46 percent of men and 51 percent of women of the age of 15 own an account in a financial institution. In addition, 34 percent of men and 35 percent of women have made or received a digital payment in the last year and around 31 percent of the population owns a debit card. Finally, the share of the Indonesian population that borrows is significantly high, around 18.5 percent of the population has borrowed from a financial institution.

Figure 35: Gender Split and Usage of Financial Services



Source: Global Findex Database, 2017

While men and women enjoy similar involvement in the financial digital services in the economy, it's not highly reflected in the workforce. While 60 percent of the micro-enterprises are owned by Women, the female labor participation is only 39.5 percent compared to 82 percent of that of the males[227]. The general financial literacy of the economy is low at 38 percent in 2019[228]. In 2016, financial literacy was around 29 percent, although that of women was much lower at 25.5 percent in contrast to the men at 33.2 percent.

[226] The conversation, "How fintech can help Indonesia's small and medium enterprises survive the COVID-19 pandemic" https://theconversation.com/how-FinTech-can-help-indonesias-small-and-medium-enterprises-survive-the-covid-19-pandemic-148528

[227] World Bank Indicators

[228] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/

7.6.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Indonesia

An interesting aspect of the FinTech sector in Indonesia is the collaboration between the different FinTech stakeholders to develop the sector. FinTech, platforms, banks, and the government are working together to introduce new digital services and increase the share of financial inclusion in the economy as millions of Indonesians don't have bank accounts. FinTech and traditional banks have been teaming up with FinTech platforms to offer wider ranges of FinTech solutions to consumers[229]. For example, Julo is a P2P lending platform that offers unsecured consumer loans of about USD 300 at an aggressively competitive rate of 3-5 percent per month.[230]

7.6.7 The Impact of COVID-19 on FinTech services

COVID-19 has had a mixed effect on the FinTech industry, contributing to the growth of the sector while also presenting multiple challenges. With social distancing, FinTech companies have an advantage over traditional services as they don't require any physical interactions. P2P Lending FinTech companies have registered a higher demand for loans, especially from small businesses and workers to survive the pandemic[231]. As the risks of non-performing loans increased, FinTech lending increased digital tech adoption such as e-KYC and new demand for an ecosystem like APIs[232]. However, new FinTech companies have been delaying launching new FinTech solutions, as investors are becoming more cautious and risk-averse as partnerships between FinTech and businesses are negatively impacted.[233] In addition, FinTech lending companies have been facing other delays due to layered bureaucracy with governmental institutions.[234]

7.6.8 Emerging FinTech Companies in Indonesia

With the pandemic pushing cashless banking solutions, the FinTech sector reached new highs, spawning and boosting several FinTech startups. Many have launched new products and services in the market, gained recognition, or raised funds from venture capitalists (VCs) and notable investors. We list some of the most exciting FinTech companies providing services to SMEs to watch in the upcoming years.

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[229] Ibid
[230] Ibid
[231] *Indonesia Fintech Report and map 2020*. Fintech Singapore. (2021, October 18). Retrieved November 2, 2021, from https://fintechnews.sg/45513/indonesia/indonesia-fintech-report-and-map-2020/
[232] Ibid
[233] Ibid
[234] Ibid

Table 27: Emerging FinTech Companies in Indonesia

Name of Company	Services
Payfazz	Launched in 2016, Payfazz is an agency-based financial platform that facilitates bill payments, mobile top-up, money transfers, etc. As of Jul 2020, Payfazz has over 250,000 active agents. It expanded to P2P lending, POS system, and freelancer marketplace. In 2019, Payfazz processed USD 1.2 billion in annual transactions.
Link Aja	Launched in Mar 2019, LinkAja is a centralized QR code payment platform that unites four of Indonesia's state-owned banks with the economy's local carrier Telkom Indonesia and state-owned energy corporation Pertamina. LinkAja facilitates e-payment, digital financial services, and fund transfers.
Julo	Julo, a P2P lending platform, offers unsecured consumer loans of about USD 300 at an aggressively competitive rate of 3-5 percent per month. Julo has managed to keep its interest rate low by using alternative data to power its proprietary credit scoring technology. In Sep 2019, Julo raised USD 10 million in Series A2, led by Quona Capital.
Alami	ALAMI is an SME financing platform that is focused on the Islamic Market. Since it establishment in late 2017, ALAMI has disbursed loans of about USD 4 million within two years with a non-performing loan rate close to 0 percent. ALAMI cooperates with Bank Permata Syariah, and transactions are carried out with sharia contracts.
Uangteman	UangTeman, one of the first P2P cash lenders licensed by OJK, offers an unsecured micro-lending service where credit decisions are made real-time and instantly by big data analytics that determines creditworthiness. The FinTech is expanding to the Philippines and is in the process of obtaining a license.

7.7 KENYA

7.7.1 DFS Context and Trends

Kenya was an early adopter of FinTech in Africa and has remained an important center of FinTech innovation for the continent. In 2007, Kenyan mobile phone operator Safaricom launched M-Pesa, an early mobile banking and payment service that proved hugely popular among Kenyans. M-Pesa provided checking and money transfers to many unbanked Kenyans, and it has since expanded to others in Africa as well.[235] Since then, the Kenyan FinTech ecosystem has expanded to become an important regional hub, focusing primarily on digital banking, payment gateways, digital credit products, and insurtech. The capital city of Nairobi is the second-largest FinTech hub in Africa, containing an estimated 20 percent of African FinTech firms.[236] The Kenyan FinTech ecosystem has roughly 150 FinTech companies at any given time, and financial inclusion is high, with 82.9 percent of the adult population having access to at least one financial product.[237]

Although growth in the Kenyan economy in general and the Kenyan FinTech ecosystem have historically been strong, growth since the COVID-19 pandemic has been something of a mixed bag. The population of Kenya is young and growing, and the economy saw high annual growth before the pandemic.[238] The Kenyan economy was poised to grow at a 6 percent annual rate before the outbreak of COVID-19,[239] a trend that it had been following for several years prior, although the pandemic caused Kenya's economy to contract overall.[240]

More recently, the Kenyan FinTech ecosystem has started to see the entry of large multinational firms into a market traditionally dominated by homegrown firms. As net incomes have dropped, Safaricom has entered partnerships with international giants Alibaba, Paypal, and Visa. The company is also considering deepening its existing ties with Amazon as it expands further into cloud technology.[241] M-Pesa competitor Airtel Africa recently sold a 25 percent stake in its mobile money business to Mastercard for USD 100 million.[242]

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[235] Investopedia (2020). https://www.investopedia.com/terms/m/mpesa.asp
[236] Chambers and Partners (2021). https://practiceguides.chambers.com/practice-guides/FinTech-2021/Kenya
[237] African Business (2020). https://african.business/2020/02/economy/is-FinTech-in-kenya-too-successful/
[238] Financial Technology Partners (2019). https://ftpartners.docsend.com/view/kg7dbcj
[239] African Business (2020). https://african.business/2020/02/economy/is-FinTech-in-kenya-too-successful/
[240] The World Bank (2020). https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=KE
[241] Hinchliffe, R (2021). "Safaricom mulls M-Pesa partnership with Amazon." FinTech Futures. https://www.FinTechfutures.com/2021/05/safaricom-mulls-m-pesa-partnership-with-amazon/
[242] Hinchliffe, R (2021). "Airtel Africa sells 25 percent stake in mobile money arm to Mastercard for USD100m." FinTech Futures. https://www.FinTechfutures.com/2021/04/airtel-africa-sells-25-stake-in-mobile-money-arm-to-mastercard-for-100m/

7.7.2 The FinTech Ecosystem in Kenya

7.7.2.1 Overview of the Main Actors in the FinTech Ecosystem

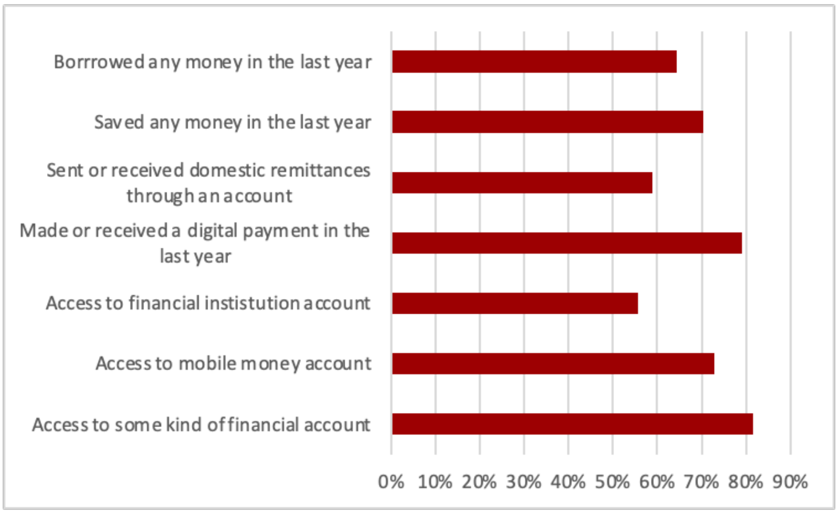
Like many economies, startups, traditional banks, and regulators are major actors in the Kenyan FinTech ecosystem, but telecommunications companies also play an unusually large role. Banks like ICICI serve as intermediaries for the Kenyan FinTech space, as banks are required to sponsor new FinTechs wishing to operate in Kenya. According to stakeholder interviews, sponsors are easy for new FinTechs to find, as banks in Kenya recognize the value that FinTechs bring to the industry. The firm partnering with a bank might be a startup with a new idea, such as Tanda, or it might be an established telecom company like Safaricom seeking to provide a mobile platform for the new venture. Finally, regulators like the Central Bank of Kenya (CBK) set the rules for the ecosystem, although stakeholder interviews characterized Kenyan regulators as reactive and fairly hands-off so as not to stifle FinTech innovation. Changing FinTech regulations often requires coordinating legislative changes with the Kenyan parliament, so obtaining regulatory approval for new ventures can take a long time. However, Kenyan FinTechs are allowed to operate while approval is pending as long as no consumers are harmed.

7.7.2.2 Overall FinTech Usage

Access to financial services is high among Kenyans, owing primarily to the ubiquity of DFS and mobile money accounts. 81.6 percent of Kenyan adults have access to some kind of financial account; access to mobile money accounts is significantly higher (72.9 percent) than access to traditional financial institutions (55.7 percent). Digital payments and remittances were key financial services, with 79 percent of people over age 15 have made or received a digital payment in the last year, and 59 percent of the same group having sent or received domestic remittances through an account. Access to savings and credit is also relatively high, with 70.3 percent of people over 15 having saved any money and 64.4 percent having borrowed any money in the last year. However, most saving and borrowing occurs outside of traditional financial institutions, with only 26.8 percent of people over 15 having saved at a financial institution within the last year and only 19.2 percent having borrowed from a financial institution or used a credit card.[243]

[243] Findex (2018). https://globalfindex.worldbank.org/sites/globalfindex/files/countrybook/Kenya.pdf

Figure 36: Use of Financial Services in Kenya Among Adults 15 or Older



Source: Global Findex Database, 2017

7.7.3 FinTech Regulatory Framework

7.7.3.1 Key Regulatory Actors

The authorities in charge of compliance and enforcement of regulations applied to companies providing FinTech services include:

Table 28: Key Regulators for FinTech Services in Kenya

Regulator	Details
Central Bank of Kenya	Regulates, supervises, and licenses financial institutions under the Banking Act and according to regulations. Also licenses and regulates microfinance institutions. Has oversight of payment systems and implements foreign exchange policy. Issues guidelines for the operation of financial institutions. Remittance providers, credit reference bureaus, and credit information providers also fall under their purview. Legislation has been introduced in the Kenyan parliament to give them specific jurisdiction over DFS providers[244].
Capital Markets Authority (CMA)	Regulates capital markets and all public securities issuers. Licenses and monitors capital market intermediaries. Regulates new capital market products and securities. Ensures a safe environment for investment.[245] Cryptocurrencies, digital

[244] Central Bank of Kenya. https://www.centralbank.go.ke/bank-supervision/

[245] Capital Markets Authority. https://www.cma.or.ke/index.php/about-us/who-we-are

	investment providers, and other FinTechs dealing with securities and investment are subject to CMA regulation.
Insurance Regulatory Authority (IRA)	Regulates and provides oversight for the insurance industry in Kenya. They are also responsible for developing policy frameworks for the industry and ensuring consumer protection.[246] Insurtech companies and other digital insurance providers fall under the IRA.
Communications Authority of Kenya	Regulates information and communications sector. Responsible for licensure of all communications systems and services in Kenya. Also charged with facilitating the development of e-commerce, developing a cybersecurity framework, managing competition in the communications sector, and protecting consumer rights within the sector[247]. All digital platforms and mobile payment FinTechs are subject to the CA in some form due to being digital businesses.

7.7.3.2 Regulations Related to FinTech Services

FinTech products and services are currently regulated under Kenya's existing financial services regulatory framework, which was designed for more traditional products and services. As a result, there are instances where certain FinTech players, products, and services are not regulated.

Table 29: Regulations Related to FinTech Services in Kenya

Key Area of Regulation	Regulation Name	Details
Banking and Digital Financial Services	Banking Act, Central Bank of Kenya Act, and proposed Central Bank Amendment Bill (2020)	The Banking Act regulates banks and banking in Kenya. Central Bank of Kenya Act creates the CBK to regulate and license banks and foreign exchange businesses. The proposed Amendment bill would give the CBK regulatory oversight over digital financial products and services, digital credit providers, financial product providers, and financial conduct. If passed, this would be the first major legislative and regulatory shift dealing specifically with FinTech in Kenya[248].

[246] Insurance Regulatory Authority. https://www.ira.go.ke/index.php/about-us/mandate-objectives
[247] Communications Authority of Kenya. https://www.ca.go.ke/about-us/who-we-are/what-we-do/
[248] Chambers and Partners (2021). https://practiceguides.chambers.com/practice-guides/FinTech-2021/Kenya

Payment Services	National Payment System Act	Allows licensing and regulation of payment services and payment service providers under the CBK[249].
Insurance	Insurance Act	Establishes the IRA and provides for the regulation of insurance services, insurers, and insurance intermediaries by the IRA[250].
Microfinance	Microfinance Act	Allows for licensing and regulation of microfinance institutions by the CBK[251].
Telecom and Information	Kenya Information and Communications Act	Establishes the Communications Authority and provides for the regulation of the communications and information sector, including broadcasting, multimedia, telecom, and postal services by the CA.[252] Also contains limited cybersecurity provisions.[253]
Cybersecurity	2018 Computer Misuse and Cybercrimes Act	Main cybersecurity law in Kenya. Lays out specific cybercrimes including stealing or leaking passwords, false publication of data, and fraudulent use of data. Also lays out investigative procedures for cybercrimes and allows for international cooperation with foreign agencies to prosecute cybercrimes.[254]
Regulatory Sandbox	Regulatory Sandbox Policy Guidance Note	The CMA has approved three applications to participate in the sandbox, the applicant can proceed with testing the product or service in Kenya. The CMA may, during the testing period, require modifications to be made to the testing plan. During the testing period, the applicants are required to submit interim reports on the progress of the tests and comply with other requirements from the regulator, including safeguard mechanisms.[255]
Data Protection	Data Protection Act, 2019	Regulates the processing of personal data of data subjects who are resident in Kenya, by data controllers and data processors. The Act regulates the processing of personal data, provides for the rights of data subjects, and prescribes the obligations of data controllers and data processors[256]

249 Ibid.
250 Ibid.
251 Ibid.
252 Ibid.
253 Chambers and Partners (2021). https://practiceguides.chambers.com/practice-guides/cybersecurity-2021/kenya/trends-and-developments
254 Ibid.
255 Ibid
256 Ibid

Anti-Money Laundering and Combating the Financing of Terrorism	2009 Proceeds of Crime and Anti-Money Laundering Act	Establishes the Financial Reporting Centre (FRC) for the collection of anti-money laundering compliance reports from financial institutions and certain non-financial institutions (e.g., casinos and gem brokers).[257] Also imposes stiff fines for individuals and institutions who are found to be receiving the proceeds of the crime[258].

7.7.4 FinTech & SMEs

7.7.4.1 The SME Sector in Kenya

Kenya's largely informal MSME sector plays a significant role in the Kenyan economy. MSMEs in Kenya accounted for over 98 percent of businesses, with about 79 percent of these firms classified as informal[259]. The 2016 Kenya National Bureau of Statistics MSME Survey[260]estimated that MSMEs accounted for about 34 percent of Kenya's GDP while 90 percent of new jobs added in 2019 were from MSMEs.

Although SME lending from banks has increased in recent years, firms still struggle with accessing financing. Between 2017 and 2019, the number of active bank loans issued to MSMEs rose by 42 percent, increasing to KES 638 billion (about USD 5.7 billion) from about KES 414 billion.[261] However, SME loans only accounted for 20 percent of bank loans in 2019, compared to 19.2 by 2017. The MSME Finance Gap database[262] identifies a USD 19 billion financing gap for MSMEs and although banks have increased their supply of loans to SMEs, there is still a significant need for alternative financing sources.

7.7.4.2 FinTech-Based Financial Inclusion of SMEs

Mobile payments have significantly increased financial inclusion in Kenya. In 2006, only 26 percent of Kenyans had access to one basic internet service, compared to 83 percent in 2021.[263] This rapid growth has largely been fostered by developments in mobile payments as

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257 Anti-Money Laundering Forum (n.d.). https://www.anti-moneylaundering.org/africa/Kenya.aspx
258 The East African (2017). "Kenyan president signs anti-money laundering Bill to law." https://www.theeastafrican.co.ke/business/Kenyan-president-signs-anti-money-laundering-Bill-to-law/2560-3836038-3ec523z/index.html
259 Wakiaga, Phillips (n.d). *The Focus on SME is a welcome intervention.* https://kam.co.ke/the-focus-on-smes-is-a-welcome-intervention/
260 *2020 MSME FinAccess Business Survey Report* (2020). Central Bank of Kenya. https://www.centralbank.go.ke/uploads/banking_sector_reports/1275966539_2020 percent20Survey percent20Report percent20on percent20MSME percent20Access percent20to percent20Bank percent20Credit percent20- percent20Final percent20- percent2015 percent2007 percent2021.pdf
261 Ibid.
262 *MSME Finance Gap* (n.d). SME Financing Forum. https://www.smefinanceforum.org/data-sites/msme-finance-gap
263 Chitavi et al. (2021). *Kenya is Becoming a Global Hub of FinTech Innovation.* Harvard Business Review. https://hbr.org/2021/02/kenya-is-becoming-a-global-hub-of-FinTech-

telecom companies take advantage of the high proliferation of mobile phones to provide banking services. SMEs have led this uptake in mobile payments, with a study[264] of over 800 MSMEs in Kenya finding that 80 percent of these businesses used mobile money services once a week, compared to the average Kenyan use of about twice a month.

A new wave of FinTech firms is focusing on addressing SME financing issues in Kenya. The number of digital loans has risen from 41 percent in 2014 to 91 percent in 2018 as SMEs and individuals look for other sources of financing to fill the gap in bank loans.[265] FinTech firms have lending services to consumers, with some relying on mobile money transactions for credit scoring instead of traditional methods. Firms have also leveraged relationships with banks to provide loan services to underserved and hard-to-reach areas. For example, M-Pesa partnered with KCB Bank to provide loan and savings services to an extensive network of mobile money users.[266]

7.7.4.3 Regulations Affecting the SME Sector and FinTech Services

Currently, few regulations are dealing with the provision of FinTech services to SMEs in Kenya. According to stakeholder interviews, most existing FinTech regulations in Kenya focus on consumer protection rather than their impact on SMEs. Stakeholders also note that although there are currently no incentives for FinTech firms working with SMEs in Kenya, there are incentives contained in the Startup Bill currently being considered by the Kenyan Parliament. The bill also contains credit guarantees for startups, which may benefit SMEs looking to take advantage of FinTech loan programs.[267] Otherwise, little regulation specifically dealing with SMEs and FinTech exists. The closest candidate would be the Microfinance Act, which regulates microfinance providers; although it does not deal with FinTech specifically, it deals with microloans, which may be of increased interest to SMEs. [268]

7.7.5 Gender-based Impact of FinTech Financial Inclusion

Women in Kenya have lower rates of financial inclusion than men when it comes to both digital and conventional financial services. In terms of conventional financial services, women are less likely than men to have an account with a financial institution, almost half as likely to have saved at a financial institution, and less likely to have a debit card. The financial

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innovation?utm_medium=email&utm_source=newsletter_weekly&utm_campaign=weeklyhotlist_not_activesubs&deliveryName=DM120138

264 Higgins, D., Kendall, J., & Lyon, B. (2012). *Mobile money usage patterns of Kenyan small and medium enterprises*. Innovations: Technology, Governance, Globalization, *7*(2), 67-81.

265 Lashuk, Anton (2020). *Kenya's Alternative Lending from Borrowers' Perspective: High Demand Stands behind Tempting Supply.* Armada Labs. https://www.armadalabs.com/blog/kenyas-alternative-lending-from-borrowers-perspective-high-demand-stands-behind-tempting-supply

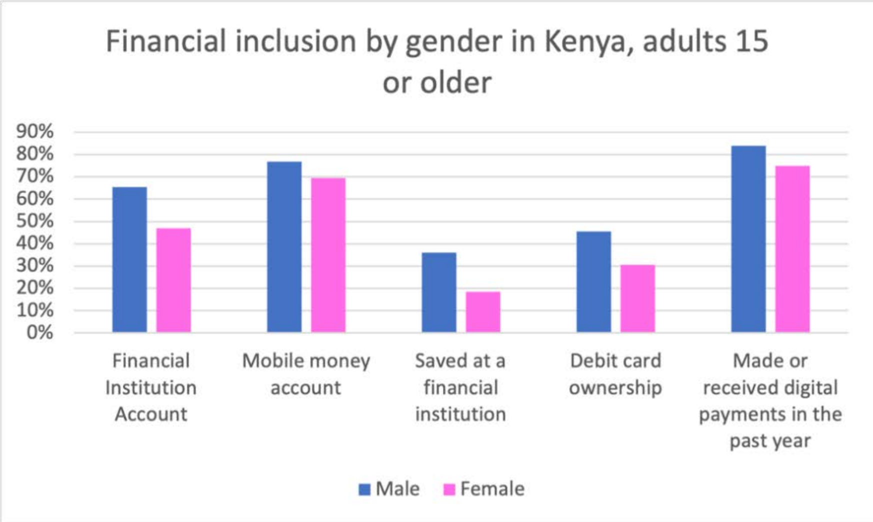
266 Ibid.

267 Issaias, A (2020). "Kenya's Senate Introduces the Startup Bill 2020." Mondaq. https://www.mondaq.com/constitutional-administrative-law/992640/kenya39s-senate-introduces-the-startup-bill-2020

268 Chambers and Partners (2021). https://practiceguides.chambers.com/practice-guides/FinTech-2021/Kenya

inclusion gap is smaller for digital finance but still important; women are less likely than men to have a mobile money account or to have made or received digital payments within the last year. [269]

Figure 37: Financial Inclusion by Gender in Kenya Among Adults 15 or Older

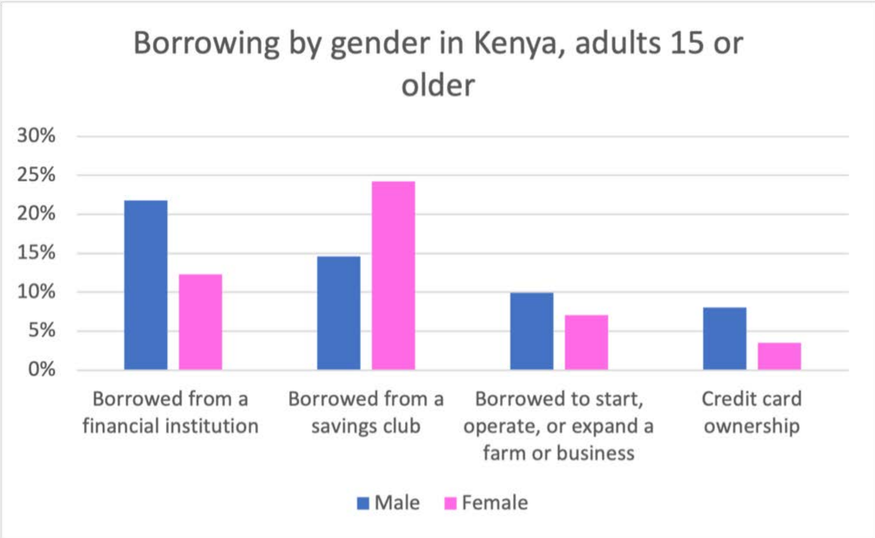


Source: Findex

One crucial area where women experience less financial inclusion is borrowing. Women are less likely than men to have borrowed from a formal financial institution, less likely to have borrowed to start, operate, or expand a farm or business, and half as likely to own a credit card. However, women are more likely to have borrowed from a savings club, suggesting that women are more likely to seek credit outside of formal institutions.[270]

[269] Findex (2017). https://globalfindex.worldbank.org/
[270] Ibid.

Figure 38: Borrowing by Gender in Kenya Among Adults 15 or Older.



Source: Findex

7.7.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Kenya

M-Pesa was the original driver of financial inclusion in Kenya by offering affordable digital financial services to the unbanked, and changes to their transaction limits and fees further cemented this status during the COVID-19 pandemic. M-Pesa and other mobile money platforms were already well-positioned to fill the need for cashless payments that resulted from the pandemic, and Safaricom chose to waive all service fees for M-Pesa in 2021 and make all person-to-person transactions under KES 1,000. Finally, M-Pesa allowed SMEs to increase their daily transaction limits to KES 150,000 from KES 70,000. This allowed for the growth of the online shopping segment in Africa during the pandemic, and also netted M-Pesa a million new users[271].

7.7.7 The Impact of COVID-19

The COVID-19 pandemic, while bad for Kenya's economy overall, did prove helpful to certain actors in the Kenyan FinTech ecosystem, especially those in the mobile money sector. The pandemic caused the first contraction in Kenya's GDP in nearly three decades[272], but it also increased the user base for M-Pesa, the economy's largest mobile money network, by a million users.[273] Growth in mobile money was helped by the CBK's decision in March 2020 to announce measures favoring mobile money over cash in response to the

[271] Global Business Outlook (2021). https://www.globalbusinessoutlook.com/mobile-money-revolutionises-kenyan-FinTech/
[272] The World Bank (2020). https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=KE
[273] Global Business Outlook (2021). https://www.globalbusinessoutlook.com/mobile-money-revolutionises-kenyan-FinTech/

pandemic[274]. The pandemic was not as fortuitous for those outside the established mobile money sector, causing investing in the Kenyan FinTech sector to drop from USD 198 million in 2019 to an estimated USD 7 million in 2020.[275] The pandemic also saw a drop in mobile loans and a steep increase in defaults, especially among lower-income customers from the informal sector.[276]

7.7.8 Emerging FinTech Companies in Kenya

Kenya is becoming a home to a number of FinTech companies aiming to offer faster and affordable financial services to SMEs with the help of technology. Here are a few names of emerging FinTech companies in Kenya:

Table 30: Emerging FinTech Companies in Kenya

Name	Details
M-Pesa	**Established in 2007 by telecommunications firm Safaricom, M-Pesa was the** first entrant into the digital payment sector **in Kenya. According to statistics from the Communications Authority of Kenya, M-Pesa controlled 98.85 of the Kenyan mobile money markets as of Q1 2020[277].**
Equitel	Emerging mobile money competitor of M-Pesa. Offers **a full suite of banking services to mobile users**. Part of a collaboration between Equity Bank and telecommunications firm Airtel. Controls a growing share of the Kenyan mobile money market but remains much smaller than M-Pesa[278].
DigiFarm	**Provides loans for farmers** and allows them to access farm inputs for discounted prices. Run by Safaricom, telecommunications firm and owner of M-Pesa. Has 14,000 active members[279].
Tanda	Financial services app focused on MSMEs that focuses on **providing inventory credit,** mobile banking, insurance, and utility payments[280].
Zanifu	An online lending platform for MSMEs. Provides **cashless payment** and ordering along with a **working credit line**[281].

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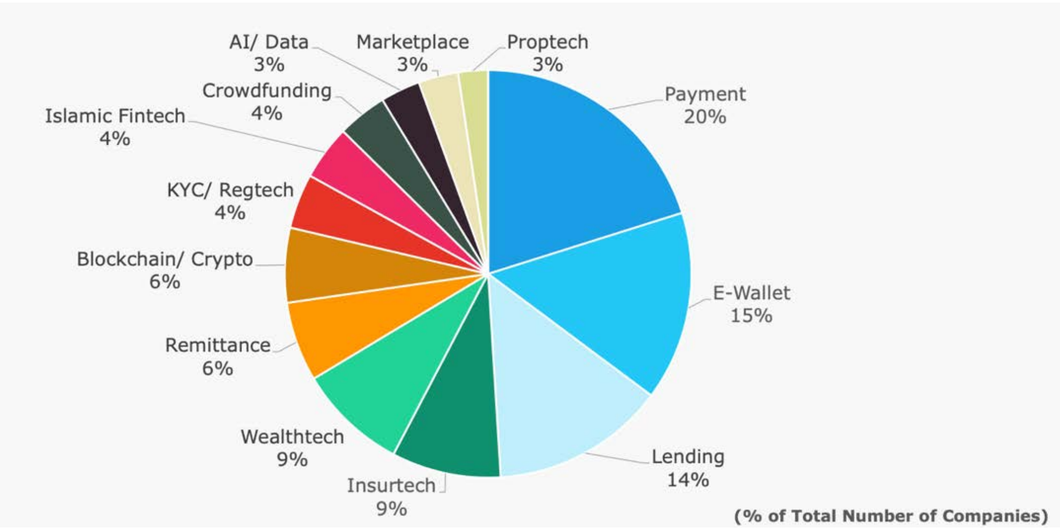
274 Chambers and Partners (2021). https://practiceguides.chambers.com/practice-guides/FinTech-2021/Kenya
275 Global Business Outlook (2021). https://www.globalbusinessoutlook.com/mobile-money-revolutionises-kenyan-FinTech/
276 Kimathi, S (2020). "Kenyan loans via mobile phones drop 50 percent, says KCB." FinTech Futures. https://www.FinTechfutures.com/2020/08/kenyan-loans-via-mobile-phones-drop-50-says-kcb/
277 Connecting Africa (2020). http://www.connectingafrica.com/author.asp?section_id=761&doc_id=762180
278 Harvard Business Review (2021). https://hbr.org/2021/02/kenya-is-becoming-a-global-hub-of-FinTech-innovation
279 TechCrunch (2021). https://techcrunch.com/2021/10/08/insuretech-on-the-heels-of-a-FinTech-boom-heats-up-in-africa/
280 Crunchbase. https://www.crunchbase.com/organization/tanda-8649
281 Crunchbase. https://www.crunchbase.com/organization/zanifu

7.8 MALAYSIA

7.8.1 DFS Context and Trends

Malaysia has an established financial sector that is gradually moving towards digital finance. According to stakeholders, Malaysian finance has traditionally been dominated by large brick-and-mortar banks, but more startups and digital solutions have entered the market as the digital segment has grown, with some partnerships emerging between startups and bigger banks. COVID-19 has accelerated the growth of digital finance. Usage of e-payment services recorded a higher growth of 30.2% to 7.2 billion transactions in 2021 (2020: 5.5 billion, 13.5%). Total outward e-remittance transactions increased significantly, valued at RM10.3 billion or 56.2% growth from the previous year.[282] This growth has allowed the FinTech market of Malaysia to be able to challenge the markets of other economies and present itself as a major player in the regional FinTech scene. Digital payments and e-wallets are leading the Malaysian FinTech space, although the overall market is quite diverse[283]. Malaysian FinTechs are also making use of innovative information-gathering techniques to extend credit and insurance to SMEs in the economy, entering segments of the market where high transaction costs had previously precluded traditional banks from offering such services[284].

Figure 39: Composition of Malaysian FinTech Services



Source: FinTech News Malaysia

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282 Abraham, F., and S. L. Schmukler (2017). "Addressing the SME Finance Problem." The World Bank. https://documents1.worldbank.org/curated/en/809191507620842321/pdf/Addressing-the-SME-finance-problem.pdf

283 Ibid.

284 Abraham, F., and S. L. Schmukler (2017). "Addressing the SME Finance Problem." The World Bank. https://documents1.worldbank.org/curated/en/809191507620842321/pdf/Addressing-the-SME-finance-problem.pdf

7.8.2 The FinTech Ecosystem in Malaysia

7.8.2.1 Overview of the Main Actors in the FinTech Ecosystem

The Malaysia FinTech ecosystem is composed of FinTech companies, established banks that sometimes choose to partner with them, established intermediaries, and regulators that dictate the terms followed by the 2 groups. The Malaysian FinTechs appear to be much more agile than large incumbent banks and can introduce financial products to market much faster. However, large banks have capital and familiarity with the regulatory system. Regulatory risk and oversight are issues in Malaysia like in other economies, and the regulators are tasked with resolving these issues. According to stakeholders, when FinTechs first appeared in Malaysia in the early 2000s, relations between the two groups were uneasy, with a sense among established banks that new players in the market might vanish altogether. In more recent years, the collaboration between the two groups has started to develop, although stakeholders interviewed note that many organizations are still working out the structure of those relationships. Many of the new entrants into the DFS space (virtual banking in particular) are collaborations between FinTechs and established banks. In addition, the ecosystem includes other established intermediaries from the capital market such as fund management companies, and stockbroking companies that partner with fintech companies.

7.8.2.2 Overall FinTech Usage

Malaysia has seen strong growth in digital finance and FinTech, and interest in these services is high, but barriers exist in terms of infrastructure and access. In 2020, Malaysia gained over 3 million new subscribers to mobile banking services[285]. Moreover, over 400,000 new businesses registered for QR code payment services, representing a 164 percent increase over the previous year[286]. Further, a study by Visa Consumer Payment Attitudes found that over 74 t percent of Malaysians were aware of digital banking, and 66 percent were interested in using such services. The same study found that Malaysia's preference for cash was just 23 percent, indicating a readiness to embrace digital payments[287]. Around 78 percent of respondents were interested in using digital banking for bill payments, 69 percent for transferring money to family and friends, 62 percent for payment at retail locations, and 61 percent for managing deposits and withdrawals.[288] Smartphone use among Malaysians is high, at 87.6 percent in 2020[289]. However, many smartphones used in Malaysia are not consistently updated, which often makes them inappropriate for FinTech use in terms of security, hardware, or software compatibility. About 43 percent of Malaysians do not visit a

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285 Dezan Shira and Associates (2021). "Digital Banking in Malaysia: New Opportunities for Fintech." https://www.aseanbriefing.com/news/digital-banking-in-malaysia-new-opportunities-for-fintech/

286 Ibid.

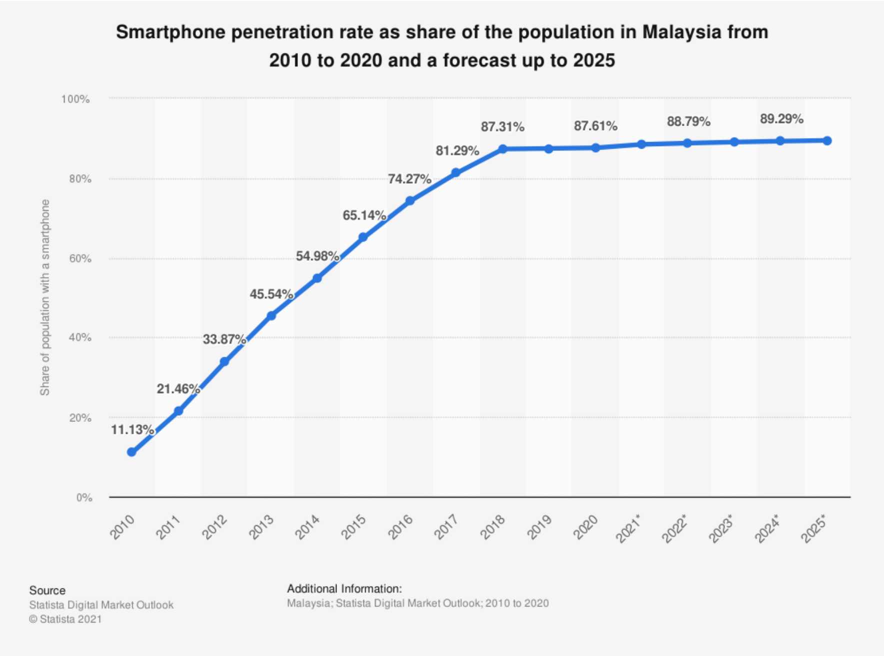
287 Ibid.

288 Ibid.

289 Statista (2021) https://www.statista.com/statistics/625418/smartphone-user-penetration-in-malaysia/

physical bank branch and only use online banking. Therefore, greater access to technology (e.g., compatible mobile phones or smartphones) and internet access (e.g., affordable data packages for mobile phones) could potentially greatly increase the use of FinTech services[290].

Figure 40: Smartphone Ownership in Malaysia as a Proportion of Total Population, 2010-2025 (projected).



Source: Statista

7.8.3 FinTech Regulatory Framework

7.8.3.1 Key Regulatory Actors

Where a FinTech business falls within any business or includes an activity that is regulated or licensed in Malaysia, the regulatory and legal requirements to conduct such business or activity must be complied with the applicable Malaysian laws. The key regulators in charge of enforcing the regulations applicable to FinTech services are:

Table 31: Key Regulators of FinTech Services in Malaysia

Regulator	Details
Bank Negara Malaysia	The Malaysian central bank, which regulates the economy's financial system and sets its monetary policy. It regulates financial infrastructure and payment systems, with a stated emphasis on financial inclusion and

[290] TechWire Asia (2021) https://techwireasia.com/2021/07/majority-of-consumers-are-eager-to-use-digital-banking-in-malaysia/

	economic stability.[291] FinTechs such as e-wallets and payment systems (e.g., BigPay and Tranglo) as well as most non-capital financial services would have their operations fall under the oversight of the BNM. The BNM also licenses financial institutions.
Securities Commission Malaysia (SC)	A statutory body that regulates businesses, the securities sector, and capital exchanges.[292] Thus, any FinTech with a capital exchange or securities component would have their activities fall under SC oversight. In Malaysia, cryptocurrencies are generally considered securities which make these fall under SC oversight[293].
Ministry of Housing and Local Government	This Ministry is the regulator of moneylending activities which is closely linked with FinTech and contributes to the micro-lending segment. The Ministry revealed a set of guidelines in late 2020 encouraging licensed moneylenders to offer loans digitally. The new guidelines were introduced keeping microentrepreneurs in mind, who most often are unable to get loans from banks.[294]

7.8.3.2 Regulations Related to FinTech Services

Currently, Malaysia does not have a specific regulatory regime applicable to FinTech participants, and the existing regulatory framework generally applicable to the traditional financial services industry applies equally to FinTech startups.

Table 32: Regulations Related to FinTech Services in Malaysia

Key Area of Regulation	Regulation Name	Details
Payment Instruments	Financial Services Act 2013	Issuers of payment instruments (e.g. e-money, payment cards) are regulated by BNM under an approval regime that attracts less stringent requirements than a full license which is applicable in the case of a digital bank. The differentiated gatekeeping regime is intended to ensure regulatory requirements are proportionate to the risk and complexity of the underlying business activity.
Digital Islamic Banking	Islamic Financial Services Act 2013	The Act provides regulation and supervision of Islamic financial institutions, payment systems, and other relevant entities and provides oversight of the Islamic money market and Islamic foreign exchange market to promote financial stability and

[291] Bank Negara Malaysia https://www.bnm.gov.my/introduction
[292] Securities Commission Malaysia https://www.sc.com.my/about/about-the-sc
[293] Freeman Law, "Malaysia Cryptocurrency Laws." https://freemanlaw.com/cryptocurrency-old-2/malaysia/
[294] https://www.fintechdemand.com/news/finance-news/fintech-companies-embrace-brand-new-online-malaysian-lending-guidelines/

		compliance with Shariah and for related, consequential, or incidental matters. [295].
Digital Banking	Licensing Framework for Digital Banks	Full regulatory framework laying out regulatory and licensing requirements for digital banks (including for Islamic digital banks) under the BNM in greater detail than FSA 2013. Digital banking licenses will be issued to 5 consortiums during Q1 2022[296]. At the time of writing, digital bank licenses have not yet been issued.[297]
Digital Customer Onboarding	Electronic Know-Your-Customer (e-KYC) guidelines	The guidelines aim to streamline the digital onboarding process for customers by banks and financial institutions. [298] The guidelines set minimum standards that financial institutions must observe when using digital identification and verification for potential customers. Focuses on the secure application of e-KYC technology, enabling BNM oversight of e-KYC methods, and ensuring AML/CFT control measures[299].
Tokens and Cryptocurrency	Guidelines on Digital Assets	Issued by the SC to govern digital token offerings and digital asset custody[300].
Capital Markets/Digital Investment Management	2007 Capital Markets and Services Act (CMSA)	Establishes governance of stockbroking, investment advising, derivatives, and corporate finance under the SC. [301] Also regulates online investment under the SC[302], [303].
Crowdfunding/P2P Lending/Digital Asset Exchanges/ Online Asset Sales	Guidelines on Recognized Markets	The regulatory framework is pursuant to the CMSA. Requires crowd funders, P2P lenders, digital asset exchanges, and platforms offering online asset sales to register as recognized

[295] Malaysia, B. N. (2013). Islamic Financial Services Act 2013. Kuala Lumpur, Malaysia: Bank Negara Malaysia.
[296] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/malaysia
[297] Kandiah, S. (2021). “In Review: digital markets, funding, and payment services in Malaysia.” Lexology. https://www.lexology.com/library/detail.aspx?g=d115ed69-0824-46af-ad27-61eca72f8a56
[298] Ibid.
[299] Kandiah, S. (2021). “In Review: digital markets, funding, and payment services in Malaysia.” Lexology. https://www.lexology.com/library/detail.aspx?g=d115ed69-0824-46af-ad27-61eca72f8a56

[300] Ibid.
[301] Kandiah, S. (2021). “In Review: digital markets, funding, and payment services in Malaysia.” Lexology. https://www.lexology.com/library/detail.aspx?g=d115ed69-0824-46af-ad27-61eca72f8a56
[302] Ibid
[303] The SC has also released the Digital Markets Strategy as part of their regulation of online markets and investments, such as crowdfunding and roboadvising.

		market operators with the SC. Also makes the trading of any digital asset subject to SC approval.[304]
Data Protection	2010 Personal Data Protection Act	Governs the collection, use, and disclosure of personal data concerning commercial transactions.[305] The law is administered, investigated, and enforced by the Personal Data Protection Commissioner.[306]
Anti-Money Laundering/ Combating the Financing of Terrorism	2001 Anti-Money Laundering, Anti-Terrorism Financing, and Proceeds of Unlawful Activities Act	Outlines money laundering and terrorism financing offenses and provides for the prevention and investigation of these offenses. Provides for AML/CFT enforcement by various ministries for issues that fall under their specific purview.[307]
Cybersecurity and IT Risk	Risk Management in Technology Policy	Released by the BNM to establish minimum standards to manage cybersecurity and information technology risk.[308]

7.8.4 FinTech & SMEs

7.8.4.1 The SME Sector in Malaysia

SMEs are a key part of the Malaysian economy in terms of employment and income generation. In 2020, SMEs account for 13.5 percent of exports, 38.2 percent of GDP, and 48.0 percent of total employment. SMEs are overwhelmingly concentrated in the service industry, with the services sector accounting for 62.1percent of SMEs, followed by the manufacturing and construction industries. Recent growth in the SME sector has been driven by growth in the service and manufacturing industries. [309]

SME FinTech's needs are primarily focused on payment solutions and obtaining credit. According to stakeholder interviews, the very first FinTech to be adopted in Malaysia were digital payment solutions, driven by the desire of SMEs and Malaysian merchants to do business with Chinese tourists, who were accustomed to paying digitally. As the use of digital payments has grown among Malaysian consumers, these technologies have become commonplace. Peer-to-peer investing, digital asset-based lending, and microfinance have

[304] Ibid.
[305] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/malaysia
[306] Lexology (2021). "The Malaysai Personal Data Protection Act 2010 – All you need to know (Part 1)." https://www.lexology.com/library/detail.aspx?g=ec5c2b84-c3aa-44d1-a61e-df0f35092c63
[307] Bank Negara Malaysia (n.d.). "Malaysia Anti-Money Laundering & Counter Financing of Terrorism Regime." https://amlcft.bnm.gov.my/AMLCFT02bi.html
[308] LogRhythm (n.d.). "Bank Negara of Malaysia's Risk Management in Technology (RMiT)." https://docs.logrhythm.com/docs/kb/compliance/bank-negara-of-malaysias-risk-management-in-technology-rmit
[309] Malaysian Digital Economy Corporation https://mdec.my/digital-economy-initiatives/for-the-industry/sme/

also been in the economy for a few years, but the COVID-19 pandemic has spurred further growth there as well as SMEs need more funding quickly. [310] Traditional lending institutions have not historically offered affordable credit to SMEs due to the difficulty of finding reliable public information on the creditworthiness of these firms and the high cost of administering small loans. On this, BNM has introduced the BNM's Fund for SMEs to provide financing at competitive rates for SMEs via various financing facilities such as the Targeted Relief and Recovery Facility, SME Automation and Digitalization Facility, High-Tech Facility, and Micro Enterprise Facility.[311] Digital platforms have used practices like crowdfunding and reverse factoring to address these challenges.[312]

7.8.4.2 FinTech-Based Financial Inclusion of SMEs

FinTech services aimed at SMEs in Malaysia primarily focus on payment solutions, credit, and insurance. Digital payment and digital wallets have existed in Malaysia for some time, although their usage has increased further as a result of the COVID-19 pandemic. Stakeholder interviews suggest that the demand for these products was originally driven in large part by Malaysian SMEs and merchants who wanted new ways to sell to Chinese tourists who preferred digital payments. There are also startups working on using FinTech to provide microfinance and microinsurance to SMEs, as well as the broader Malaysian consumer market. The ability to digitize and automate the administrative and information-gathering aspects of loan and insurance products reportedly makes it possible for FinTechs to provide these products where conventional banks cannot. SMEs can also take advantage of P2P finance and crowdfunding platforms to raise money, as well as digital onboarding for conventional bank loans in the wake of COVID-19. Online insurance, in general, has also expanded with the entry of digital insurance firms from other economies in the region. Finally, full-service digital banking is coming to the Malaysian market in 2022, which has reportedly generated excitement. [313]

7.8.4.3 Regulations Affecting the SME Sector and FinTech Services

Even with the efforts of the Malaysian government to support FinTech innovation and financial inclusion for SMEs, the slow licensing process and the small number of licenses granted have limited the impact of FinTechs. Equity crowdfunding (ECF) platforms and P2P lenders cannot operate in Malaysia without a license from the SC, which might create regulatory barriers for SMEs who may wish to raise funds through these avenues. While flexibility to welcome new-entrants promotes growth in the sector, both the BNM and the SC

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[310] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/malaysia
[311] Bank Negara Malaysia's Fund for SMEs https://www.bnm.gov.my/covid19
[312] Abraham, F., and S. L. Schmukler (2017). "Addressing the SME Finance Problem." The World Bank. https://documents1.worldbank.org/curated/en/809191507620842321/pdf/Addressing-the-SME-finance-problem.pdf
[313] Ibid.

are usually cautious in their licensing and approval processes.[314] This gate-keeping regime is done to ensure that only good quality new entrants enter the market and to prevent over-crowding in the FinTech space in Malaysia, but may slow down growth of the sector. For instance, although interest in digital banking has been high, digital banking cannot begin in the economy until 2022, and the low number of licenses granted may limit access. Although workarounds like the Regulatory Sandbox exist, the small number of products enrolled in these programs at a time also limits access.[315] Although the desire for improved access to SME finance exists among both regulators and the public, one cannot access FinTech products that have not been allowed to formally enter the market. This is particularly problematic for FinTech startups who are often SMEs themselves. Many FinTech startups reportedly solve this problem by collaborating with larger banks, but it remains difficult for FinTech SMEs to compete on their own.

7.8.5 Gender-based Impact of FinTech Financial Inclusion

Women in Malaysia experience less overall economic access than men and are less likely to access FinTech solutions as well. Women are less likely to own a bank account or to have borrowed from a financial institution, and they are over 10 percent less likely to have a debit card. In terms of digital finance, women are over 10 percent less likely to have made or received a digital payment within the last year[316]. According to stakeholders, financial inclusion is a lower priority for women than overall economic inclusion, with only 20 percent of SMEs in Malaysia being owned by women[317]. Although Malaysian women are making progress in areas like education, with 62 percent of Malaysian university graduates being female, they remain more likely to work in lower-paid industries that are easily automated and less likely to work in the formal economy than men. They are also less likely to own land and other important assets that may help in obtaining credit, and they are less likely to use technology or be financially literate.[318] These barriers to economic inclusion make it more difficult for women to access traditional financial services. Although FinTech may offer solutions such as alternative credit assessments, barriers such as lower wages make it harder for women to access FinTech as well.

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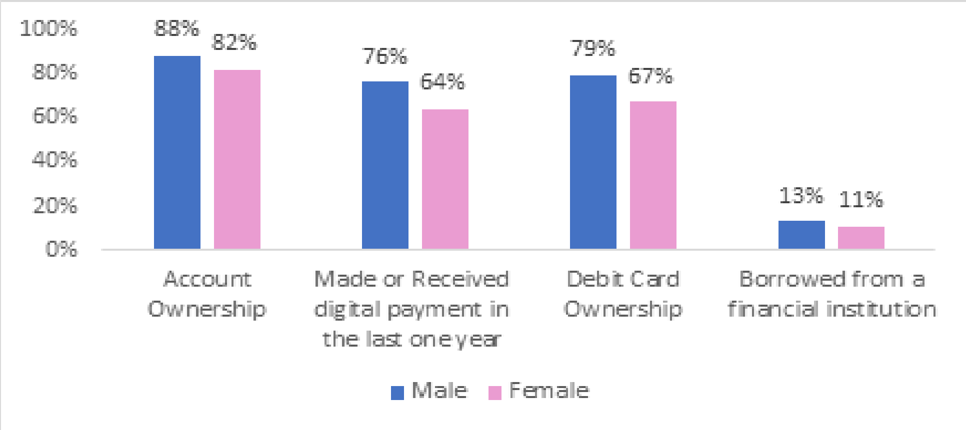
[314] https://www.legal500.com/developments/thought-leadership/regulating-malaysias-fintech-and-what-to-expect-in-2022/
[315] Ibid.
[316] Findex (2017). https://globalfindex.worldbank.org/
[317] Alliance for Financial Inclusion (2021) https://www.afi-global.org/newsroom/blogs/financial-inclusion-key-to-women-entrepreneurs-success/
[318] Tran, K.M. (2019). "Fintech in Southeast Asia: An Opportunity for Women's Financial Inclusion & Economic Growth." http://www.cogitasia.com/fintech-in-southeast-asia-an-opportunity-for-womens-financial-inclusion-economic-growth/

Figure 41: Differences in Financial Participation Among Malaysians by Gender



Source: Findex 2017.

7.8.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Malaysia

Regulators and government officials have sought to find ways to help FinTechs overcome regulatory barriers while maintaining consumer protections. This includes the introduction of a regulatory sandbox and an innovation hub that puts FinTech entrepreneurs in direct contact with regulators. The BNM administers the Regulatory Sandbox Framework, an application-only program for FinTechs to pilot their products under more flexible regulatory oversight. The Sandbox is open to all companies looking to enter the Malaysian FinTech sector, not just Malaysian companies.[319] The government-run Malaysia Digital Economy Corporation (MDEC) has developed the Fintech Booster program, a capacity building platform created in collaboration with Bank Negara Malaysia (BNM) to provide resources for both local and foreign companies that are based in Malaysia or looking to set up business in Malaysia through Legal & Compliance, Business Model, and Technology support.[320] The regulators have also stressed practicing a differentiated gatekeeping regime (i.e. license, approval, registration) that is risk-based and proportionate, including efforts on new licensing frameworks (e.g. Digital Bank, Digital Insurance, and Takaful Operator). In addition, there have been some updated policies to facilitate the industry's adoption of new technology such as the introduction of the e-KYC policy, RMiT policy, open banking policy, and so on.

In addition to setting regulatory priorities, the Malaysian government also commonly invests directly in FinTechs through organizations like MDEC and Cradle Fund. This allows them to guide FinTechs from both the regulatory and the capital approaches. Grant funding for FinTechs and startups is also available. MDEC is a government agency under the Ministry of Communications and Multimedia Malaysia that focuses on encouraging digital innovation

[319] Bank Negara Malaysia https://www.bnm.gov.my/sandbox
[320] https://fintechbooster.com.my/

(including FinTech) and attracting digital business to the economy. In addition to Fintech Booster, MDEC provides grant and funding facilitations (investor matching, alternative financing, debt ventures, etc.), global market access opportunities, community building / corporate innovation activities, nurturing, reskilling, and upskilling digital talent as well as mentorship. MDEC also has programs such as the Malaysia Tech Entrepreneur Pass, Foreign Knowledge Worker initiative, and the upcoming Digital Nomad initiative to attract foreign talent and entrepreneurs in a continuous effort to build a more robust Malaysian ecosystem.[321] The Cradle Fund is an investment firm incorporated under the Ministry of Science, Technology, and Innovation that provides grants, investments, and tax incentives to FinTech startups and SMEs in general.[322]

Further, the Malaysian government set up Malaysia Co-investment Fund (MyCIF) in 2019, administered by the SC. The role of MyCIF is to further catalyze access to financing for MSMEs through the use of ECF and P2P platforms as an alternative avenue for fundraising. It also seeks to serve as an efficient and transparent means to channel government funds to the intended MSMEs. Since its establishment, MyCIF has received RM260 million in allocation from the government for co-investment with private investors through ECF and P2P financing platforms. Besides, the SC launched the "Alliance of FinTech Community" (aFINity) in 2015 to catalyze and nurture Fintech development in the Malaysian capital market. It serves as a platform for continuous interactions between the SC as a capital market regulator and all relevant Fintech stakeholders such as innovators, financial institutions, government agencies, ecosystem players, and investors.[323] Among others, aFINity is aimed at understanding the needs of the fintech community and providing regulatory and policy steer to promote responsible innovation.

One innovative approach reported by multiple stakeholders is gamifying FinTech applications to improve customer engagement and experience. This approach to improving the "stickiness" of banking may improve bank usage and FinTech uptake among Malaysian consumers. This approach was also described as a way for SMEs to retain customers for their products by seeking the services of gamification consultants for their apps or websites. Stakeholders did mention that working with SMEs did require a different approach than working with established banks or other large clients. For instance, large clients are better able to absorb game development costs incurred at the outset, whereas developers can make themselves more accessible to SMEs by offering a subscription model. Stakeholders also mentioned that improving customer engagement through gamification may help FinTechs reach out to the large number of Malaysians who have smartphones but remain unbanked.

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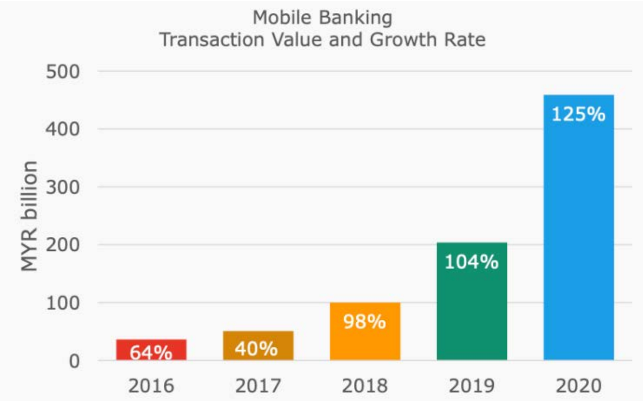
[321] Malaysian Digital Economy Corporation https://mdec.my/about-mdec/who-we-are/
[322] Cradle Fund. https://www.cradle.com.my/
[323] https://www.sc.com.my/development/digital/embracing-innovations

7.8.7 The Impact of COVID-19

Malaysia's digital shift has been ongoing for the past decade, but the pandemic has accelerated digital banking adoption. In 2020, online and mobile banking penetration reached 112.5 percent and 61.8 percent respectively, and RM 460 million worth of mobile banking transactions were conducted – a 125 percent jump compared to the previous year. The Malaysian government's Movement Control Order (MCO) acted as a catalyst for the shift, helping to add 3 million new mobile banking service subscribers last year as well as pushed e-wallet usage and adoption to new highs. [324] Merchants were quick to embrace the trend, with over 400,000 new businesses registering for QR code payment acceptance, a 164 percent jump from the previous year[325]. The Malaysian FinTech ecosystem also shifted more to retail investing products during the pandemic, including products that allow users to invest their spare change and robo-advisors that allow users to build Shari'ah-compliant online portfolios[326].

Figure 42: Growth in Mobile Banking by Total Transaction Value, 2016-2020



Source: Malaysia FinTech Report 2021

7.8.8 Emerging FinTech Companies in Malaysia

Financial technology (FinTech) is rapidly becoming a central part of the financial sector of Malaysia. With an increasing middle class, high mobile phone penetration rates, and government support for the digital economy, Malaysia is well situated to take advantage of FinTech innovation. Below are some examples of FinTechs that are enabling SMEs to manage their finances and are worth keeping an eye on.

[324] Malaysia FinTech Report 2021. https://fintechnews.my/wp-content/uploads/2021/05/Fintech-Report-Malaysia-2021-Fintech-News-Malaysia-x-BigPay.pdf

[325] Dezan Shira and Associates (2021). "Digital Banking in Malaysia: New Opportunities for Fintech." https://www.aseanbriefing.com/news/digital-banking-in-malaysia-new-opportunities-for-fintech/

[326] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/malaysia

Table 33: Emerging FinTech Companies in Malaysia

Name	Details
CoinGecko	**Cryptocurrency ranking site** that tracks price, market capitalization, volume, community growth, open-source development, and other metrics. Tracks nearly 10,000 coins across over 500 exchanges.[327] Has received support from the Malaysian government[328].
BigPay	**Digital payment app** with a focus on transparency, security, and low fees. Also provides customers with a prepaid debit card to use for day-to-day purchases. Secured USD 100 million in venture capital funding[329].
Qoala	Indonesian **digital insurance** startup that processed 2 million policies per month as of 2020.[330] Expanding into the Malaysian market. Provides online insurance, and presently rolling out on-demand insurance products. Currently enrolled in BNM Regulatory Sandbox[331].
Tranglo	**Cross-border payment solution** focusing on foreign remittances, business payments, and mobile payment. Originally aimed at guest workers in Malaysia sending money back home. As of 2019, the company had reportedly processed USD 4.66 billion in transfers to 130 companies[332].
MX Global[333] (Blockchain/ Cryptocurrency)	Is one of the four recognized market operator-digital asset exchanges (RMO-DAX) in Malaysia, after obtaining full approval from the Securities Commission Malaysia (SC) in July 2021. Secured capital injections from cryptocurrency exchange Binance and digital business solutions provider Cuscapi Bhd.
Policy Steet[334] (Insurance)	Insurtech startup and is one out of two insurtech companies in the region to secure in-principle approval for a combined Reinsurance and General Insurance license from the Labuan Financial Services Authority.

[327] CoinGecko. https://www.coingecko.com/en
[328] IBS Intelligence (2020) https://ibsintelligence.com/ibsi-news/top-4-exciting-malaysian-FinTechs-transforming-financial-services/
[329] Ibid.
[330] TechCrunch https://techcrunch.com/2020/04/27/qoala-raises-13-5m-to-grow-its-insurance-platform-in-indonesia/
[331] IBS Intelligence (2020) https://ibsintelligence.com/ibsi-news/top-4-exciting-malaysian-FinTechs-transforming-financial-services/
[332] Ibid.
[333] https://www.theedgemarkets.com/article/mx-global-secures-capital-injections-binance-and-cuscapi-fund-growth-plans
[334] https://vulcanpost.com/764013/policystreet-funding-series-a-expand-sea/

MoneyMatch[335] (Remittance/ Cross Border Payments)	**Cross border payments fintech startup** that has graduated to become a full licensee under the Money Services Business Act in 2019 in BNM's Fintech Regulatory Sandbox. Since then, MoneyMatch has scaled to serve over twenty thousand individuals and over three thousand small and medium enterprises (SMEs) in Malaysia whilst also expanding operations to Australia and Brunei, with total transaction volumes exceeding US$550 million (RM2.3 billion) covering cross border trade payments and individual remittances.

[335] https://www.digitalnewsasia.com/startups/malaysian-fintech-moneymatch-secures-us44mil-series-kaf-investment-bank-lead-investor

7.9 MEXICO

7.9.1 DFS Context and Trends

The FinTech ecosystem in Mexico continues unstoppable since 2016, having achieved an impressive 90 percent growth in the last years, according to the Legal Paradox FinTech Radar[336], which highlights the investments made by venture capital in the sector and points to a takeoff of the Insurtech segment. This shows that these new companies are taking advantage of the social demand for new technologies applied to financial and investment activities. Lending is the most important sector in Mexico with 108 FinTechs representing 16.85 percent of the ecosystem, followed by FinTech tools (92 FinTechs - 14.35 percent), Wealth Management (78-12.17 percent) and Payments (63 FinTechs -9.83 percent). Agrotech is the sector with the least activity with 2 FinTechs representing only 0.31 percent of the ecosystem, followed by Remittances (9 FinTechs -1.41 percent), Mobile Tech (10 FinTechs -1.56 percent), and Capital Markets (12 FinTechs -1.87 percent).

Figure 43: Mexico's FinTech Growth per Year

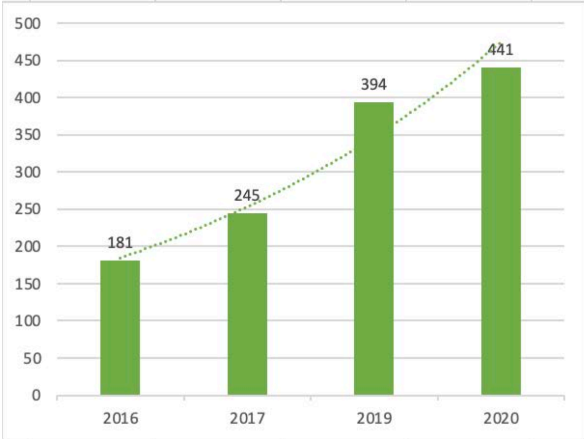
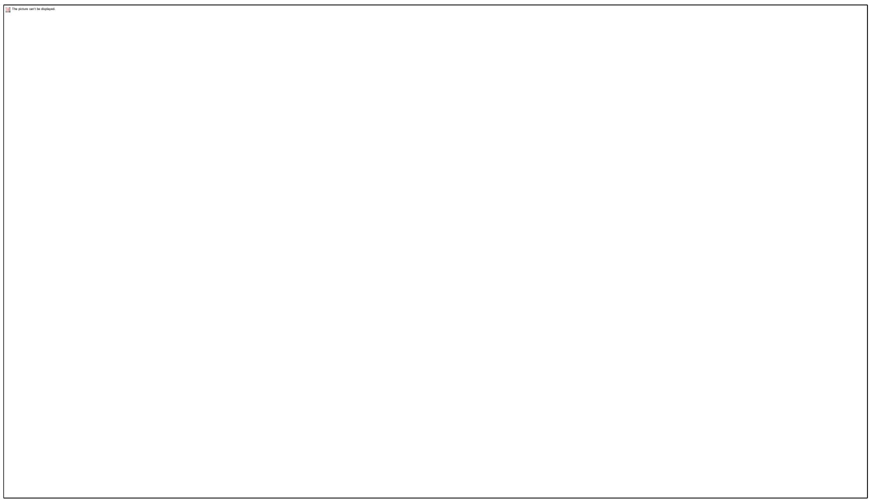


Figure 44: Mexico's FinTech Companies by Sector



[336] Legal Paradox – El estado de FinTech en México 2020

Among the most noteworthy data in this report is the significant growth of companies dedicated to technology in the insurance industry, or Insurtech, with 38 startups and technology companies in the insurance industry, or Insurtech, with 52 startups, a 46 percent increase over previous editions. In addition, 60 percent of Mexican FinTech startups received some type of financing in recent months, a third of them from venture funds. third of them from venture capital funds. In the analysis of the undisputed growth of the FinTech sector in Mexico, it is important to mention the shutdown rate. Since the last update of the FinTech Radar in May 2019, **only 4.5 percent of ventures stopped operating, which means the closure of only 18 companies.**

7.9.2 The FinTech Ecosystem in Mexico

7.9.2.1 Main Actors in the FinTech Ecosystem

There are 4 main actors in the FinTech ecosystem in Colombia: i) Regulatory Authorities ii) FinTech Firms; iii) FinTech Financiers; (iv) FinTech Collaborators and v) FinTech Consumers. The first are the regulatory authorities that oversee control and compliance of the FinTech Law and innovative approaches. Second are the FinTech firms themselves, who leverage innovative technologies like payments and lending. to provide financial services. The third actor group is the financiers and collaborators that invest in the growth of FinTech firms. This includes venture capitals, angel investors, incubator funds, as well as financial support programs from the government. For example, the Asociación Mexicana de Inversionistas[337]. The next group involves the collaborators who help corporations develop innovative programs that leverage the FinTech and Insurtech ecosystem to achieve business results and develop new organizational capabilities such as Finnovista[338], as well as FinTech Mexico[339], the association leading companies in the sector and corporate partners for the enrichment and development of financial technologies. The last actor is the end consumer of FinTech services, which could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.9.2.2 FinTech Usage

According to FinTech Mexico, 4.6 million people or companies use some FinTech-based solution and by 2021 the figure is expected to double to 9.2 million users[340], driven by the context of the Covid-19 pandemic. Although Mexico still faces the challenge of financial inclusion, with only four out of every 10 people accessing a financial service in an economy of approximately 126 million people. For SMEs in Mexico, the most used categories of FinTech

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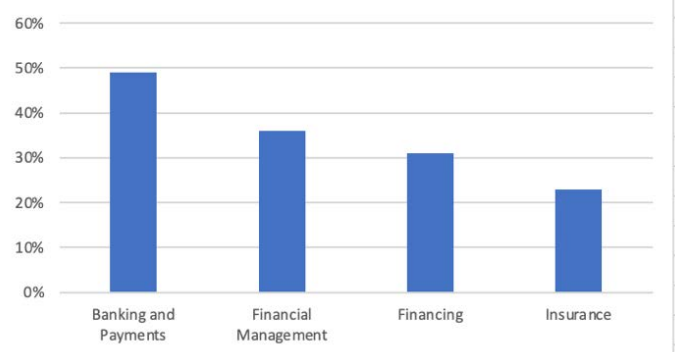
[337] AmiMexico. https://www.amimexico.com/#/
[338] Finnovista. https://www.finnovista.com/
[339] Fintech Mexico. https://www.FinTechmexico.org
[340] Forbes Mexico - https://www.forbes.com.mx/foro-empresas-FinTech-impulso-pandemia/

services include (i) Banking and Payments, (ii) Financial Management, (iii) Financing, (iv) Insurance.[341]

Figure 45: Mexico's FinTech Usage by Category



7.9.3 FinTech Regulatory Framework

7.9.3.1 Key Regulatory Actors

The governmental entities in charge of the proper functioning of the FinTech bill and the approved Financial Technology Institutions (ITF) are the regulators of the Mexican financial system: the Ministry of Finance and Public Credit (SHCP), the Banking and Securities Commission (CNBV), the Bank of Mexico (Banxico) and the National Commission for the Protection and Defense of Users of Financial Services (CONDUSEF), so if you have any problem with an authorized FinTech bill, you should contact any of these entities.

Table 34: Key Regulatory Actors in Mexico

Authority	Responsibilities
Banxico	It is authorized to set forth, through general provisions, several complementary provisions to the FinTech Provisions, especially regarding transactions in foreign currency and with virtual assets.
Ministry of Finance and Public Credit (Secretaria de Hacienda y Crédito Público or the SHCP)	It is authorized to construct for administrative purposes the provisions of the FinTech Law on behalf of the federal government.

[341]EY Global Fintech Adoption Index. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-FinTech-adoption-index.pdf

Supervising commissions (CNBV, CONDUSEF, CNSF, CONSAR)	The acknowledged authority of the supervising commissions depends on the respective spheres of competence granted to them by their respective laws. Thus, for example, in terms of Article 350 of the Securities Market Law, the CNBV has supervisory faculties, in terms of its law; the Law of the National Banking and Securities Commission (Ley de la Comisión Nacional Bancaria y de Valores), concerning securities market intermediaries, investment advisers, self-regulatory bodies, stock exchanges, companies that manage systems to facilitate securities transactions, securities depository institutions, central securities counterparties, securities rating agencies, and price vendors. Thus, in these terms, the enactment of different secondary regulations was granted to each financial authority according to the matters each one oversees, the CNBV being responsible for FinTech general provisions and the SHCP for the anti-money laundering provisions.

7.9.3.2 Regulations Related to FinTech services

The rapid growth of the FinTech sector in Mexico led to a redefinition of the regulatory perimeter to safeguard financial stability, enable more inclusiveness, and protect individuals' and firms' rights. While the accelerated expansion of the sector was beneficial for financial inclusion, covering segments that were normally excluded from traditional business models due to high costs and operational limitations, the lack of regulation also created new risks**.**

The unchecked growth of digital banking, contactless digital payments, and real-time payments led to FinTech the introduction of the FinTech Law in 2018, which has played an important role in regulating industry players and has had a positive impact on consumers' overall trust. As time went by, an increasing number of companies have applied for licenses to operate under the FinTech Law, streamlining processes, and allowing for new companies to join the sector. The Government of the Republic of Mexico, through the Ministry of Finance and Public Credit (SHCP), the National Banking and Securities Commission (CNBV), and other financial authorities, have worked on the development, consolidation, and implementation of the Law to Regulate Financial Technology Institutions "Ley FinTech".

The regulation of the FinTech sector placed Mexico at the forefront in terms of regulations and consolidated it as a pioneer economy in regulating this sector. It is important to mention that the Mexican Government does not guarantee or back the money of clients who save or invest in companies in this sector.[342]

The FinTech Law regulates Financial Technology Institutions (ITFs) to offer greater legal certainty to users of financial services through digital platforms. The then President of

[342] Ley FinTech – Diario Oficial 9 Marzo 2018. http://www.diputados.gob.mx/LeyesBiblio/ref/lritf/LRITF_orig_09mar18.pdf

Mexico signed on March 8, 2018, the Law to Regulate Financial Technology Institutions, which was published in the Official Gazette of the Federation on March 9, 2018.

Table 35: The Two Main Classifications Envisaged by the FinTech Law in Mexico

Classification	Contemplates
Electronic Payment Fund Institutions (IFPEs).	• The issuance, administration, and redemption of electronically registered money balances to make payments or transfers. • Transactions can be made in local and virtual currencies. • They can act as money transmitters. • They may market, issue or manage means of disposition.
Collective Financing Institutions (IFC).	• Authorization to carry out financing operations (debt, equity, or co-ownership). Debt IFCs must use at least one credit bureau. • Risk disclosure regime. • A project cannot be financed by more than one IFC. • Guaranteed returns may not be offered.

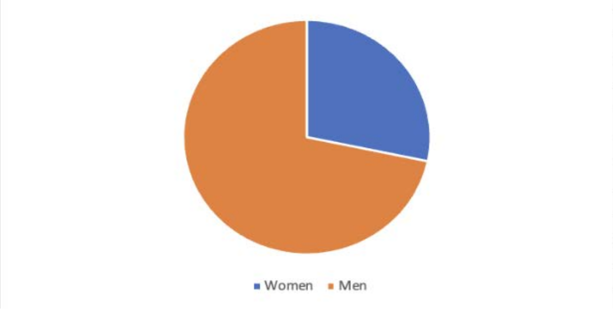
7.9.4 FinTech & SMEs

7.9.4.1 The SME Sector in Mexico

In Mexico, 99.8 percent of economic units are SMEs, which generate 52.2 percent of GDP and 69.4 percent of the economy's employment in 2019 according to Inegi (2019)[343], with data from the last economic census**.** Hence the relevance of these types of companies and the need to strengthen their performance through credit, as that performance has a substantial impact on the global behavior of the economies. This aspect determines Mexican SMEs, with less capacity to face investment processes and improvement of their processes and it has characterized them as having low productivity, low adoption of innovation, and limited technological development. Despite their great relevance, among the main causes of SMEs not prospering in Mexico is the absence of credit since the financial support granted to them is just 0.03 percent of GDP.

[343] Directorio de empresas y establecimientos 2019 - Instituto Nacional de Estadística Geografía e Informática (Inegi)

Figure 46: Mexico's SME Distribution by Gender



According to an IFC study in 2019, **28.3 percent of small and medium-sized enterprises in Mexico are under the leadership of a woman.** Among the main findings of the study, it was noted that many women are currently seeking financing to start a business, "financing women entrepreneurs in Mexico represents an opportunity of 6,502 million dollars," said the international firm. In addition, the study revealed that the main obstacle faced by women to start a business is not the lack of money, but the lack of information on financial products and procedures required to start a business.

In terms of SME financing, despite the positive trends in bank loans to SMEs, many remain unattended by formal banking institutions, and still, others face limited access to credit. In 2015, several new programs were introduced to address these problems and promote specific loans, for example, to young entrepreneurs or women-led SMEs. According to the IFC MSME Gap study, Mexico has an 85 percent gap in access to financing for formal SMEs[344].

7.9.4.2 SMEs FinTech Financial Inclusion

In Mexico, financial inclusion has been a challenge due to many reasons, **from unequal access to services in different areas of the economy to the population's lack of financial education.** Although the arrival of FinTechs has contributed to narrowing these gaps, the truth is that there are still many pending issues regarding financial inclusion. For SMEs, it is common to see these startups offering e-invoicing services, digital accounting, business intelligence, and various collection solutions. On the other hand, those that promote personal finance management can help establish daily control of expenses and income, better compare financial products on the market and manage their debts.

Two segments stand out in the FinTech ecosystem: (i) Lending and (ii) Payments. An SME that did not have access to credit can now have it since the process for obtaining credit and the interest rates offered by FinTechs allow small and medium-sized companies to find access to loans that were previously almost impossible through traditional banks. Payment systems are another point that SMEs are transforming, as they are a tool that allows them to get paid with cards, no matter how small the business is. This is very relevant for SMEs, since access to credit, and in general, to financing mechanisms, has been one of their biggest problems for years and, many times, has been the main factor of their bankruptcy or their inability to grow. In other words, there is a latent need for companies relegated by traditional financial

[344] MSME Finance Gap. https://www.smefinanceforum.org/data-sites/msme-finance-gap

institutions that are being covered by FinTechs. According to a survey carried out among senior decision-makers from small and medium-sized enterprises (SMEs) in Mexico, 49 percent of the respondents stated their companies had used at least one FinTech banking and payment service in the previous six months, making it the most widely used FinTech service category in Mexico. It was followed by financial management, with a FinTech adoption rate of 36 percent.[345]

7.9.4.3 Regulations Affecting the SME Sector and FinTech Services

The FinTech Law positively affects SMEs, since, thanks to Crowdfunding, they will be able to finance themselves in a much more accessible way than they could in the traditional financial system. This law is a reform of great magnitude, it gives way to the emergence of new business models and new ideas for investing money, which in turn will converge in a much more inclusive financial system. In addition, people will have more access to profitable and secure investments, as well as to new long-term investments.

The FinTech Provisions contemplate "Innovative Models" (*Modelos Novedosos*), also known as a regulatory sandbox, which implies the possibility for the authority to issue temporary authorizations to operate innovative services (the use of tools or technology different from those available at the time of the authorization request) in a controlled and less costly environment. This space allows companies to offer financial services to a limited number of customers, using innovative technological tools or the means to test them, before offering them to the public on a massive scale.

7.9.5 Gender-based Impact of FinTech Financial Inclusion

Mexico is at the top of the list for gender diversity in Latin America, as at least 31 percent of FinTech firms are founded by women, It is estimated that FinTechs that diversify on gender issues are the ones that seek to accelerate financial inclusion to a greater extent: 38 percent of these organizations focus on consumers and SMEs that are underserved or excluded from the financial system, compared to 31 percent of those formed by men that deal with this segment, according to a study conducted by the Inter-American Development Bank (IDB) and Finnovista[346].

There are crowdfunding companies in Mexico that offer microloans at lower interest rates by using different algorithms to approve loans within hours. According to the IDB, these data technologies can help women overcome the lack of property and other physical guarantees

[345] Statista. https://www.statista.com/statistics/1052586/mexico-FinTech-adoption-rate-category/
[346] Finnovista. https://www.finnovista.com

that banks require to approve loans, therefore granting women access to credit-related products[347].

However, there is a lot of room for Mexico to become more gender-inclusive in the FinTech and financial inclusion sector: there are women who through their work make visible the need to abolish gender gaps and begin to include women in all relevant issues by leading successful companies such as, Prometeo, a startup that seeks to create an open and connected financial market in Latin America, the company is based on an Open Banking API platform, which operates mainly in Mexico, Colombia, and Brazil.

7.9.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Mexico.

Policymakers are keen to highlight the initiatives to modernize payment systems and facilitate mobile payments. In end-2019, the Bank of Mexico set up the CoDi (Cobro Digital) platform to facilitate electronic payments and transfers.

In the area of SME lending, the private company Credijusto has created products to help the development of this type of companies, for example with the creation of Crédito Ágil, which is focused on medium-sized companies with short-term liquidity needs, amounts from MXN 500 thousand to MXN 5 million that can be handled with flexible terms, without collateral and can be funded in a few days[348].

Likewise, electronic distribution channels and digital client onboarding processes help reach excluded groups making services more efficient and lowering market entry barriers for new competitors. Additionally, compliance and risk-management approaches using digital means, through simplified customer due diligence and alternative credit scoring, help tackle barriers to financial products through the use of innovative technologies.

The Inter-American Development Bank is set to propose that Latin America and the Caribbean regulators establish a pan-regional testing ground for new fintech businesses, to facilitate further financial innovation. The Inter-American Development Bank (IDB) is working to establish a pan-regional "regulatory sandbox", to enable companies across Latin America and the Caribbean to test out new FinTech business models in more than one economy, *iupana* can reveal[349].

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[347] IADB. https://publications.iadb.org/publications/english/document/Enabling_Women's_Financial_Inclusion_Through_Data_The_Case_of_Mexico_en_en.pdf
[348] Forbes. https://www.forbes.com.mx/vislumbran-oportunidades-fintech-para-pequenas-y-medianas-empresas/
[349] Iupana. https://iupana.com/2021/03/08/exclusive-idb-pan-latam-fintech-sandbox/?lang=en

7.9.7 The Impact of COVID-19 on FinTech Services

The COVID-19 health contingency had a positive impact on financial institutions, especially those offering electronic payment or transfer services. Due to the impossibility of going to public places, transactions and deposits with credit or debit cards, via digital devices, increased considerably during the period of confinement. According to Endeavor Intelligence[350] data from January to May 2020, the capital raised by entrepreneurs in the technology sector, represented by FinTech, is almost USD 210M and the debt is USD 118M. Wallets have a 10 percent monthly growth in their use of electronic transactions. Remittances sent digitally have grown by 20 percent monthly. Online commerce has grown by 50 percent in transactional volume.

7.9.8 Emerging FinTech Companies in Mexico

The growth of the FinTech sector, inclusive of app-based and digital financial solutions in this economy, has shown rising growth in recent years. Given the flourishing FinTech sector, here are 4 promising Mexican FinTech startups:

Table 36: Emerging FinTech Companies in Mexico

Name of Company	Services
Flexio	Specialized in the automation of collections and payments for SMEs and seeks to facilitate cash flow management for companies.
Mundi	Exports and factoring with a focus on SMEs
Credijusto	Provides an online lending platform designed to offer easy, reliable, and transparent credit for SMEs
Konfio	A lending platform for small and medium enterprises (SMEs)
Prometeo	Open and connected financial market, based on Open Banking API
Clip	Delivers mobile point-of-sale (mPOS) solutions that enable Mexican merchants of all sizes to grow their business by accepting digital payments.

[350] Endeavor. https://www.endeavor.org.mx/datalab/

7.10 The Philippines

7.10.1 DFS Context and Trends

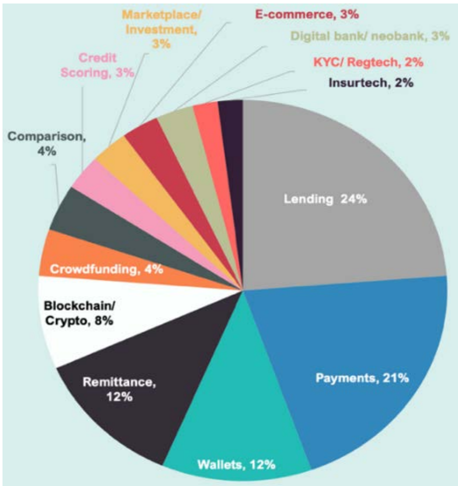
The FinTech market in the Philippines has been evolving and expanding steadily in recent years, as more unbanked Filipinos gain access to financial services via FinTech. The ecosystem is expanding from the usual financial services – money business operations such as remittance, payments, and digital wallets – to other FinTech verticals such as distributed ledger technology (DLT), cryptocurrency, insurtech and regtech. GCash, the leading mobile wallet in the Philippines, had 46 million users as of June 2021, a dramatic increase from 20 million users in January 2020. Digital payments are projected to capture the most significant chunk of the local FinTech market in 2021.[351] The biggest sectors of the Philippines' FinTech industry are lending, payments, and remittances, with payments being a particularly high-growth segment. About 70 percent of the Philippines' population is unbanked, so competition with brick-and-mortar banks is lower than in other economies. [352]

7.10.2 The FinTech Ecosystem in the Philippines

7.10.2.1 Main Actors in the FinTech Ecosystem

The Philippines' FinTech ecosystem is large and diverse, with a high number of startups and a free regulatory environment. As of 2020, the Philippines had 136 FinTechs registered in the economy. FinTech startups, such as PayMongo, one of the top 3 largest FinTechs in The Philippines[353] that recently received USD 31 million funding[354], drive much of the innovation in the Philippines and are generally bringing new products to the market. Although some startups, such as SeekCap, choose to partner with larger Philippine banks like Union Bank. Large banks are generally not first movers in the Philippine FinTech ecosystem, although most have adopted some online functionality in the wake of the COVID-19 pandemic. Finally, regulators like the Bangko Sentral ng Pilipinas (BSP), the economy's central banks, set the rules that

Figure 47: Philippine FinTech Companies by Sector



Source: The FinTech Philippines Report 2020.

[351] Oi, R (2021). "Fintechs are shattering financial inclusion barriers in the Philippines." Techwire Asia. https://techwireasia.com/2021/09/fintechs-are-shattering-financial-inclusion-barriers-in-the-philippines/

[352] John Clements Consultants (2020) https://medium.com/the-looking-glass/FinTech-opportunities-in-the-philippines-6a584ccf5211

[353] https://ibsintelligence.com/ibsi-news/3-top-fintechs-making-waves-in-the-philippines-market/

[354] https://techcrunch.com/2022/02/20/philippines-payment-gateway-paymongo-gets-31m-series-b-will-explore-regional-expansion/

FinTechs in the economy must follow, although Philippine regulators are generally seen as being very hands-off. Regulators are seen as very supportive of FinTech innovation in the economy, and the legislative arm of the government has made moves to support FinTechs as well[355].

7.10.2.2 FinTech Usage

FinTech has been on the rise in the Philippines for some time, and that growth has been accelerated by the COVID-19 pandemic. Long before the COVID-19 pandemic, many Filipinos had already been using various FinTech solutions to complete their daily transactions. The Philippines continues to show massive potential in FinTech due to factors like the "growing adoption of e-commerce and financial technology to serve the unbanked."[356] The Department of Trade and Industry even reported that the number of startups entering the FinTech sector in the economy is growing at an average rate of 16 percent annually. The e-money system sector has grown since its introduction in the economy, with 20 million registered users and over 63,000 partner merchants that accept e-money payments.[357] FinTech companies in the Philippines comprise 15 percent of the economy's start-ups and, the Philippine FinTech ecosystem is expected to grow its market value from about USD 5.7 billion in 2018 to USD 10.5 billion by 2022, according to Startup Genome's Global Startup Ecosystem Report[358]. One of the stakeholders interviewed noted that, "E-wallets have grown over the past 3 years, and COVID has helped as well."

7.10.3 FinTech Regulatory Framework

7.10.3.1 Key Regulatory Actors

The local regulators that have the most intimate contact with the FinTech industry in the Philippines are primarily the Philippines' Securities and Exchange Commission (Philippine SEC), the Bangko Sentral ng Pilipinas (BSP), and the Insurance Commission of the Philippines. These entities have consistently expressed an openness and positive regulatory view toward the developments offered by the FinTech market, particularly to the extent that FinTech players and their products, services or new ways of doing old things are able to engender financial inclusion for a population that is largely unbanked or underserved by traditional financial institutions.

[355] Ibid.
[356] Credolab (2021). "FinTech in the Philippines." https://www.credolab.com/blog/fintech-in-the-philippines
[357] Giminez, M (2020). "The Emerging FinTech Sector in the Philippines." KMC. https://kmc.solutions/blogs/the-emerging-fintech-sector-in-the-philippines
[358] Lugtu, R (2021). "FinTech is driving digital adoption in PH." The Manila Times. https://www.manilatimes.net/2021/04/30/supplements/fintech-is-driving-digital-adoption-in-ph/868696

Table 37: Key Regulatory Actors in The Philippines

Regulator	Details
Security and Exchange Commission (SEC)	Supervises the corporate sector and capital markets. Registers all Philippine corporations. Also specifically mandated to accredit microfinance NGOs. FinTechs dealing with capital exchanges, cryptocurrency, investing, or microfinance will be regulated by the SEC[359].
Bangko Sentral ng Pilipinas	Responsible for Philippine monetary policy and regulation of its financial system. Responsible for the regulation and oversight of financial service providers, and specifically responsible for the oversight and regulation of payment systems. Also has inclusive finance as part of its mandate. [360] Banking, payment, and general financial services FinTech companies would fall under the auspices of the BSP.
Insurance Commission (IC)	Regulates the Philippine insurance market. Licenses insurance providers and reviews all new insurance products prior to sale.[361] Online insurance providers and insurtech companies would be regulated by the Insurance Commission.
Anti-Money Laundering Council	Implements the 2001 Anti-Money-Laundering Act as the economy's dedicated anti-money laundering/combating the financing of terrorism authority. Regulates financial crimes compliance, collects financial intelligence, and conducts law enforcement activities related to money laundering and financial crimes. Also cooperates with international money laundering authorities and regulators[362].

[359] Chambers and Partners (2021). "FinTech 2021." https://practiceguides.chambers.com/practice-guides/fintech-2021/Philippines
[360] Ibid.
[361] Ibid.
[362]Comply Advantage (n.d). "7 Tips for FinTechs to Comply with Anti-Money Laundering in The Philippines." https://complyadvantage.com/knowledgebase/anti-money-laundering-philippines/

7.10.3.2 Regulations related to FinTech services

The regulation of FinTech industry participants engaged in financial services is based on the specific service or product offered by the participant, and closely follows the regulations applicable to non-FinTech entities intending to engage in the same or similar service or products.

Table 38: Regulations Related to FinTech Services in The Philippines

Key Area of Regulation	Regulation Name	Details
Data Privacy	2012 Data Privacy Act	Gives the National Privacy Commission the authority to regulate data privacy issues in general[363].
DFS Delivery	Public Telecommunications Policy Act	Places the delivery of financial services through mobile apps or online platforms under the regulation of the National Telecommunications Commission as value-added services[364].
Lending and Financing Licensure	Lending Company Act and Financing Company Act	Makes non-bank online lenders operating in the Philippines subject to licensure by the SEC[365].
Crowdfunding	Securities Regulation Code	Contains SEC framework for regulation of lending-based and equity-based crowdfunding[366].
QR Codes in Payments and Finance	National Quick Response (QR) Code Standard for Payment and Financial Services	BSP approved use of QR codes in payment and finance under the National Retail Payment System framework[367].
Digital Banking	BSP Circular No. 1105	Contains BSP guidelines and requirements for establishment and licensing of digital banks, which are regulated as a distinct class of bank under BSP rules[368].

363 ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/Philippines
364 Chambers and Partners (2021). "FinTech 2021." https://practiceguides.chambers.com/practice-guides/fintech-2021/Philippines
365 Ibid.
366 FinTech Philippines (2020). "The Philippines FinTech Report 2020." https://fintechnews.ph/wp-content/uploads/2020/09/Philippines-Fintech-Report-2020-fintechnews.ph_.pdf
367 Ibid.
368 The Paypers (2021). https://thepaypers.com/online-mobile-banking/philippines-central-bank-sets-regulations-for-digital-banks—1246893

Cybersecurity in Finance	BSP Circular No. 808	Lays out guidelines for cyber risk management for all banks and other institutions regulated by the BSP. Also requires banks and other institutions to report cybersecurity breaches[369].
Guidelines on Information Security	Circular No. 982	Mandates financial institutions to shore up both network and IT infrastructure security. It requires security and compliance management teams to enhance their Information Risk Management framework by reinforcing the security around data assets spread across the IT network with the help of advanced threat detection capabilities.
Anti-Money Laundering/Combating the Financing of Terrorism	2001 Anti-Money Laundering Act	Primary Philippine AML/CFT Law. Vests regulatory and enforcement powers in the AMLC. Provides for investigation of money laundering and financial crimes and requires FinTechs to develop and implement programs to manage AML risk[370].
Guidelines for Virtual Asset Service Providers	Circular No. 1108	Expanded the regulatory framework to cover other Virtual Asset Service Providers when their activities fall within the broad category of money service business (MSB).
Guidelines on the electronic money and operations of electronic money issuers (EMIs)	Circular No. 649	Defines e-money as monetary value which is electronically stored in payment instruments/devices which consumers can use to: a) buy or pay for goods and services; b) transfer or remit funds; and/or c) withdraw cash or cash equivalent.
Open Finance/Interoperability	BSP Open Finance Framework	Allows sharing of data between financial institutions with consumer consent and collaboration between financial institutions (including FinTechs). Establishes the Open Finance Oversight Committee to regulate the open finance sector[371].

7.10.4 FinTech & SMEs

7.10.4.1 The SME Sector in the Philippines

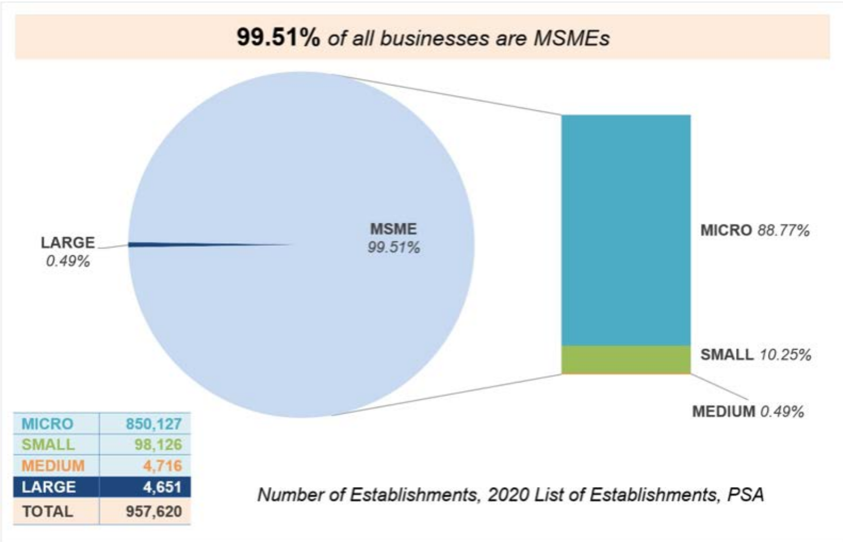
SMEs are a huge part of the Philippine economy. Small and medium enterprises (SMEs) comprise 99.6 percent of all registered business in the Philippines and employ 70 percent of the workforce. As reported by the Philippine Department of Trade and Industry, "The 2020

[369] Global Compliance News (n.d.). https://www.globalcompliancenews.com/cyber-security/cyber-security-around-the-world/cyber-security-in-the-philippines/
[370] Comply Advantage (n.d). "7 Tips for FinTechs to Comply with Anti-Money Laundering in The Philippines." https://complyadvantage.com/knowledgebase/anti-money-laundering-philippines/
[371] Bangko Sentral ng Pilipinas (2021). "BSP Establishes Guidelines on Open Finance Framework." https://www.bsp.gov.ph/SitePages/MediaAndResearch/MediaDisp.aspx?ItemId=5826

List of Establishments of the Philippine Statistics Authority (PSA) recorded a total of 957,620 business enterprises operating in the economy. Of these, 952,969 (99.51 percent) are MSMEs and 4,651 (0.49 percent) are large enterprises. Micro enterprises constitute 88.77 percent (850,127) of total MSME establishments, followed by small enterprises at 10.25 percent (98,126) and medium enterprises at 0.49 percent (4,716)."[372]

MSMEs in the Philippines have avenues for cheap credit provided for them by law, but gaps in access still exist. The Magna Carta for MSMEs mandates a minimum level of total lending to be directed toward SMEs[373], and Philippine law provides guaranteed loans of PHP 3 million or less to SMEs with low interest and no required collateral[374]. However, many SMEs are unable to obtain credit due to limited business or credit history and inadequate documentation, including business plans and financial statements[375]. This suggests that even given minimum mandated amounts of funding, information barriers still prevent Philippine SMEs from obtaining the credit they need, and there is room to streamline credit reporting and documentation in the economy's financial sector.

Figure 48: MSMEs as a Proportion of all Philippine Businesses



Source: The Philippines Statistics Authority.

[372] Department of Trade and Industry, Republic of the Philippines (2020). "2020 MSME Statistics." https://www.dti.gov.ph/resources/msme-statistics/2020msmestatistics

[373] Philippine Commission on Women (n.d.). [https://pcw.gov.ph/republic-act-8289-magna-carta-for-small-enterprises/]

[374] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/Philippines

[375] Aldaba, R. M. (2011), 'SMEs Access to Finance: Philippines', in Harvie, C., S. Oum, and D. Narjoko (eds.), Small and Medium Enterprises (SMEs) Access to Finance in Selected East Asian Economies. ERIA Research Project Report 2010-14, Jakarta: ERIA. pp.291-350.

7.10.4.2 FinTech-Based Financial Inclusion of SMEs

Philippine SMEs often struggle to access bank loans, and FinTech startups are working to extend credit to SMEs through alternative lending products. The firm Acudeen, for example, has created an online platform that enables banks and other investors to buy accounts receivable from SMEs at a discount, thereby easing cash flow pressures on small firms. The FinTech firm First Circle also helps SMEs bridge cash flow gaps through invoice financing via an online portal. Additionally, First Circle offers purchase order financing to provide SMEs enough capital to meet buyer demands they would otherwise have to turn down[376].

Alongside these products, several other startups have established "crowdfunding" platforms that extend credit to SMEs and small farms. Typically, these platforms link borrowers seeking short-term loans with individual investors. The Singapore-based company named SeedIn, for example, offers Philippine SMEs loans of up to USD 300,000 as funded by individuals who are promised annualized returns of 7 percent. Similarly, Cropital allows investors to extend loans of between PHP 5,000 and 50,000 (about USD 100 to USD 1,000) to particular farms for a specific crop cycle[377].

Figure 49: Examples of Different Types of Philippine Crowdfunding Platforms

Source: Philippine FinTech Report 2020.

7.10.4.3 Regulations Affecting the SME Sector and FinTech Services

In 1991, the Philippine Congress passed the Republic Act 6977, commonly known as the "Magna Carta for MSMEs," which started years of policymaking intended to support SMEs. Amended in 1997 and again in 1998, the Act is intended to create a business environment

[376] FinTech Philippines (2020). "The Philippines FinTech Report 2020." https://fintechnews.ph/wp-content/uploads/2020/09/Philippines-Fintech-Report-2020-fintechnews.ph_.pdf
[377] Ibid.

conducive to the health and growth of the MSME sector, which it defines as businesses valued at less than PHP 60 million. It created the MSME Development Council, which advises governmental agencies on appropriate MSME policy[378]. Although the Act does not mention FinTech specifically, it does require that all lenders under the auspices of the BSP must devote at least 6 percent of their total loan portfolio to small enterprises, and at least 2 percent to medium enterprises.

7.10.5 Gender-based Impact of FinTech Financial Inclusion

In the Philippines, there is no significant sign of a gender gap in access to finance, so access to finance for women could be expanded by increasing overall access to financial services. Filipino women have equal footing with Filipino men when it comes to accessing financial services, but they are even more likely to have formal financial accounts than men.[379] Thus, the FinTech startups that plan to make the biggest difference for women are those that stand to expand overall access to finance the most.

7.10.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in the Philippines.

In light of the information barriers that prevent Philippine SMEs from obtaining the credit needed to expand or cover operating expenses, practices that help circumnavigate these barriers are the best route to SME financial inclusion. One way to deal with these issues is by selling discounted accounts receivable on the secondary market, which provides cash flow to SMEs while managing risk for would-be creditors.[380] Simplifying loan processes for short-term loans needed for expansion or operating capital, as exemplified by SeekCap[381] and First Circle[382], can also be helpful, especially in industries with high operating capital requirements like agriculture or retail. Finally, crowdfunders in the Philippines have found ways to obtain peer-to-peer financing for projects that traditional lenders may not be interested in, either by guaranteeing rates of return or by connecting individuals with projects too small for banks to administer profitably[383].

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[378] Tibaldo, A. (2019). "Tibaldo: The Magna Carta for Micro, Small, and Medium Enterprises." SunStar Philippines. https://www.sunstar.com.ph/article/1793081/Baguio/Opinion/Tibaldo-The-Magna-Carta-for-Micro-Small-and-Medium-Enterprises

[379] Findex (2017). https://globalfindex.worldbank.org/

[380] FinTech Philippines (2020). "The Philippines FinTech Report 2020." https://fintechnews.ph/wp-content/uploads/2020/09/Philippines-Fintech-Report-2020-fintechnews.ph_.pdf

[381] Ibid.

[382] Monteiro, L. (2021). "5 Top FinTechs in the Philippines to watch out for in 2021." IBS Intelligence. https://ibsintelligence.com/ibsi-news/5-top-fintechs-in-the-philippines-to-watch-out-for-in-2021/

[383] FinTech Philippines (2020). "The Philippines FinTech Report 2020." https://fintechnews.ph/wp-content/uploads/2020/09/Philippines-Fintech-Report-2020-fintechnews.ph_.pdf

7.10.7 The Impact of COVID-19

The COVID-19 pandemic has further boosted the adoption of digital financial services in the Philippines. Mobile banking and e-wallet downloads registered tremendous surge as the economy entered Enhanced Community Quarantine (ECQ) which started on March 16, 2020, amid COVID-19.[384] Due to limited mobility and increased financial requirements, local banks such as LANDBANK, UNIONBANK, and RCBC quickly improved their digital banking services through mobile apps.[385] COVID-19 caused a steep increase in digital accounts opened and led to the release of guidelines to allow digital banks by the BSP. The number of online lenders operating in the Philippines also increased, even with increased SEC oversight and crackdowns on illegal lending platforms[386].

7.10.8 Emerging FinTech Companies in the Philippines

According to the economy's Department of Trade and Industry, there are more than 130 FinTech companies registered in the economy. With the new normal, more opportunities will surely come for the FinTech industry. Here are 5 FinTech companies to look out for in the Philippines.

Table 39: Emerging FinTech Companies in The Philippines

Name	Details
JustPayTo	The app simplifies the ability to use **multiple disbursement options** such as credit/debit cards, bank fund transfers, online banking, over-the-economy (OTC), e-wallet and cryptocurrencies. Partners with Visa and Mastercard and works with a large network of banks and billers.[387]
MarCoPay	The app utilizes **QR codes** that can be used for completing pre-boarding procedures, receiving and converting salaries into **digital currency**. Users can also spend this e-money for onboard purchases.[388]
PayMongo	Offers **online API** that can be integrated into websites and apps. Allows for bank card and digital wallet payments. Raised USD 12 million in VC funding in September 2020.[389]

[384] Bangko Sentral ng Pilipinas (2020). "Q3 Inflation Report." https://www.bsp.gov.ph/Lists/Inflation percent20Report/Attachments/20/IR3qtr_2020.pdf
[385] World Bank (2020). "Philippines Digital Economy Report 2020." https://openknowledge.worldbank.org/handle/10986/34606
[386] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/Philippines
[387] Monteiro, L. (2021). "5 Top FinTechs in the Philippines to watch out for in 2021." IBS Intelligence. https://ibsintelligence.com/ibsi-news/5-top-fintechs-in-the-philippines-to-watch-out-for-in-2021/
[388] Ibid.
[389] Ibid.

SeekCap	Affiliated with UnionBank, one of the largest Philippine banks. Helps **SMEs circumvent complicated processes in finding a business loan**. Aimed at loans for expansion or short-term financing.[390]
TONIK	The platform is a consumer financial technology company that **provides retail financial products**, including deposits, loans, current accounts, payments, and cards on a highly secure digital banking platform.[391]

[390] Ibid.
[391] Ibid.

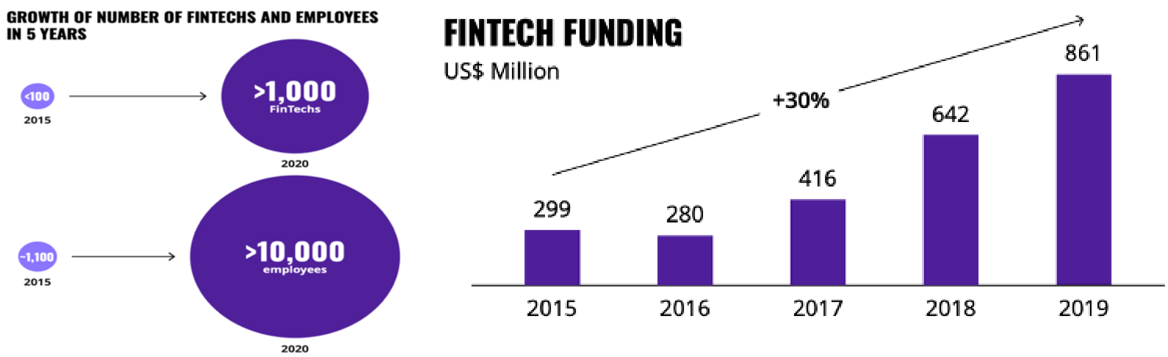
7.11 Singapore

7.11.1 DFS Context and Trends

The Singapore government is fully committed to transforming the economy into a Smart Nation. In 2014, Prime Minister Lee Hsien Loong announced plans to set Singapore on a path to becoming the world's first Smart Nation[392]. These plans involved integrating technology into every aspect of Singapore, from government service delivery to the financial system, to international trade networks. The comprehensive groundwork had already been laid in years past, with broadband programs as early as 1997 and digital identities for individuals and corporations since 2003. In recent times, the Smart Nation Initiative has focused on encouraging businesses to digitize while developing crucial digital financial infrastructure.

As a result, FinTech in Singapore has flourished and has become the FinTech hub of Southeast Asia. The figure below outlines the growth of FinTech in Singapore. The number of FinTech firms in Singapore has increased from less than 100 in 2015 to over 1,000 in 2020 and the industry has hired almost 9,000 more employees in the same time span. Funding has also increased by 188 percent between 2015 and 2019, with USD 861 million in financing received in 2019[393]. Singapore is the highest-ranking FinTech city in Asia on the 2020 Findexable's Global FinTech Index and is home to over 40 percent of the FinTech firms in Southeast Asia while attracting 65 percent of FinTech investments in the region.[394] The scale of Singaporean dominance is further emphasized by its comparatively small population of less than 6 million in a market that includes much larger economies like Indonesia, the Philippines, Thailand, and Malaysia.

Figure 50: Singapore FinTech Growth



[392] *Milestones of Singapore's Smart Nation Story* (n.d). Smart Nation Singapore, https://www.smartnation.gov.sg/about-smart-nation/our-journey/milestones
[393] *Singapore FinTech landscape 2020 and beyond - Oliver Wyman*. (n.d.). Retrieved October 18, 2021, from https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2020/dec/singapore-FinTech-landscape-2020-and-beyond.pdf
[394] Ibid

Source: Oliver Wyman Singapore FinTech Landscape 2020 and Beyond.

However, FinTech firms are struggling with competition and are prioritizing expanding to international markets. An unwanted effect of the ease of starting a FinTech firm in Singapore is the level of competition among firms in the industry. The small market of Singapore means that there are very few customers for a large and growing number of FinTech firms. A market report by Mordor Intelligence[395] classifies the Singapore FinTech market as a fragmented, highly competitive market without dominant players. Our stakeholder interviews emphasized this point by stating that organizations such as the FinTech Association have not been utilized to their full capacity in terms of lobbying for the industry. This has been due to the reluctance of older more successful firms to give any edge or support to newer firms. As a result, FinTech firms have begun to view Singapore as a launching pad to larger Southeast Asian markets, with one FinTech executive stating that "they don't expect to make money in Singapore".

7.11.2 The FinTech Ecosystem in Singapore

7.11.2.1 Main Actors in the FinTech Ecosystem

There are 5 main actors in the FinTech ecosystem in Singapore: i) FinTech Firms; ii) FinTech Collaborators; iii) Regulatory Authorities iv) FinTech Financiers v) FinTech Consumers. The first is the FinTech firms themselves, who leverage innovative technologies like blockchain and artificial intelligence to provide financial services. FinTech collaborators may be traditional financial institutions or large technology companies who are looking to incorporate FinTech services into their operations. This may be done through collaborations with existing FinTech, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. For example, Deutsche Bank and FinTech STACS recently announced a collaboration to explore a proof-of-concept for digital assets.[396] Third are the regulatory authorities that oversee the activities of firms operating in the finance and technology space such as the Monetary Authority of Singapore (MAS), as well as more regulators that are involved in all forms of business, such as consumer protection authorities and employee rights regulators. The fourth actor group is the financiers that invest in the growth of FinTech firms. This includes venture capitalists, angel investors, incubator funds, as well as financial support programs from the government. The final actor is the end consumer of FinTech services, which could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

[395] Singapore FinTech market - growth, trends, covid-19 impact and forecasts (2021-2026) – mordor intelligence. (n.d.). Retrieved October 18, 2021, from https://www.mordorintelligence.com/industry-reports/singapore-FinTech-market

[396] *Deutsche Bank and Singapore FinTech STACS announce collaboration for digital assets proof-of-concept – Deutsche Bank.* (2021). Retrieved October 18, 2021, from https://www.db.com/news/detail/20210107-deutsche-bank-and-singapore-FinTech-stacs-announce-collaboration-for-digital-assets-proof-of-concept

7.11.2.2 FinTech Usage

Both businesses and consumers have embraced the use of FinTech services. FinTech adoption in Singapore has seen exponential growth in a short period of time. According to the EY Global FinTech Adoption Index 2019[397], the adoption rate[398] of FinTech services jumped form 23 percent in 2017 to 67 percent in 2019, higher than the average[399] of 64 percent but lower than industry leaders China and India, who both have adoption rates of 87 percent. Businesses in Singapore have also recognized the benefits of adopting FinTech services into their operations, with 60 percent of Singapore based companies reporting that they believed FinTech is necessary and plan to use it to increase efficiency[400].

7.11.3 FinTech Regulatory Framework

7.11.3.1 Key Regulatory Actors

The main regulatory body of financial institutions and central bank of Singapore, MAS, has assumed the responsibility of regulating FinTech activities. FinTech firms must obtain their operation licenses from MAS (except for lending FinTech firms, who are licensed by the Registry of Moneylenders)[401] beginning operations. MAS has outlined a dual mandate in regard to its role with FinTech, which is: (i) to provide regulation conducive to innovation while fostering safety and security; and (ii) to facilitate infrastructure for an innovation ecosystem and adoption of new technologies. MAS has also collaborated with the Economic Development Board, Infocomm Media Development Authority, and Enterprise Singapore of the Ministry of Trade and Industry to establish the FinTech Office, which is a one-stop-shop for all FinTech related inquiries including government support and assistance with navigating the regulatory landscape. The table below outlines all other key regulatory actors as well as their functions.

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[397] *Global Findex Adoption Index* (2019). Ernst & Young. Retrieved from https://www.ey.com/en_gl/ey-global-FinTech-adoption-index

[398] The adoption rate is the number of FinTech adopters as a percentage of the digitally active population, where a FinTech adopter is someone who has used two or more major FinTech services in the last six months

[399] Average of the 27 cases that adoption rates were calculated for

[400] *Singapore FinTech landscape 2020 and beyond - Oliver Wyman*. (n.d.). Retrieved October 18, 2021, from https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2020/dec/singapore-FinTech-landscape-2020-and-beyond.pdf

[401] *FinTech Regulations and Compliance in Singapore – StartUp Decisions.* (2018). Retreived October 18, 2021, from https://www.startupdecisions.com.sg/blog/FinTech-regulations-and-compliance-in-singapore/

Table 40: Key Regulators for FinTech Services in Singapore

Regulator	Description
Monetary Authority of Singapore	Singapore central bank, issues operating licenses to financial institutions, including FinTech firms. Operates a single licensing regime, where firms providing financial services either obtain a Capital Market Services license or a Financial Advisers License. Houses a multi-agency FinTech Office.
Corporate Regulatory Authority (ACRA)	Oversees business registration processes
Competition and Consumer Regulatory Authority of Singapore (CCCS)	Ensures that firms are in compliance with fair competition and consumer protection legislation
Singapore Personal Data Protection Commission	Oversees the collection and use of consumer data by companies
Suspicious Transaction Reporting Office	Regulatory body anti-money laundering and terrorism financing laws

7.11.3.2 Regulations Related to FinTech Services

There are numerous laws that regulate the various activities of FinTech firms in the economy. Financial regulation in Singapore is function-based, not firm-based, a feature that is preferred by FinTech firms, according to our interviews with FinTech firms who operate in both function-based and firm-based markets. As such, FinTech firms will fall under the jurisdiction of various existing laws based on the services they provide. The below table outlines the various regulations that FinTech firms may need to comply with, based on the services offered.

Table 41: Key FinTech Regulations in Singapore[402]

Key Area of Regulation	Regulation Name	Details
Virtual Banking	The Banking Act	Banking Act, under the purview of MAS, sets out the operational and capital requirements for banks in Singapore. Digital bank licenses are issued under this law with provisions that require less initial capital, with the expectation that these digital banks will build up capital to the levels required by the Banking Act over three to five years.
PayTech, Cryptocurrency	Payment Services Act (PSA)	Regulates the activities and licensing of payment service providers and use and sale of digital payment tokens. PSA was an enhancement of the Payment Systems (Oversight) Act 2006 and the Money-Changing and Remittance Business Act 1979 to expand the activities governed to include new digital currency transactions. In addition, consumers can use the personal identification number to conduct their payment authorization.
Cryptocurrency, P2P lending, Robo-advisory	Securities and Futures Act	Regulates activities and actors involved in securities and derivatives as well leveraged foreign exchange trading
InsureTech	Insurance Act	Provides operational and licensing requirements for FinTech firms providing insurance services
Robo-Advisory	Financial Advisors Act	Regulates the activities of financial advisors in Singapore
Alternative lending (excluding P2P lending)	Moneylenders Act	Regulates lending, credit bureau activities, and use of borrower information and data
Cryptocurrency	Commodity Trading Act	Regulates all commodity trading activity, which will include some crypto assets which are traded as or backed by commodities
General	Consumer Protection (Fair Trading) Act	It requires FinTech businesses to have knowledge about the most MAS-regulated financial product and services. Consumers can seek redress or civil remedies in case FinTech companies engage in unfair practices with regards to the financial products and services

[402] Li-Ling, C. & Lee, A. (2021). *Singapore: FinTech Laws and Regulations 2021.* International Comparative Legal Guides. Retrieved from https://iclg.com/practice-areas/FinTech-laws-and-regulations/singapore

General	Personal Data Protection Act	Regulates the business activities regarding customer's personal data
General	Corruption, Drug Trafficking and Other Serious Crimes (Confiscation of Benefits) Act	Sets out Anti-Money Laundering/Counter-Terrorism Financing (AML/CFT) protocols for businesses to follow
General	MAS Guidelines	MAS routinely issues guidelines to clarify the applicability of existing laws to FinTech activities. Guidelines were issued on the application of securities laws to digital token offerings, the licensing of payment service providers under the new PSA, the provision of digital advisory services, to name a few.
Cybersecurity	The Cybersecurity Act 2018	Sets out the framework for cross-border enforcement of cybercrime
Regulatory Sandbox	2016 FinTech Regulatory Sandbox	Allows financial institutions and startups with a nascent FinTech service or product to experiment in a controlled environment to mitigate any financial risk.

MAS has also created Regulatory Sandboxes, though FinTech firms may not be convinced about their effectiveness. The sandbox provides an environment where new ideas can be tested by relaxing some regulations but restricting the scope of activities and/or market to control the extent of any potential damages. A recent study[403] found that sandboxes increased the level of average investment and total amount of investment in economies where they were implemented. However, from our interviews, we found that some FinTech firms are not convinced that innovation will emerge from the sandbox. One FinTech executive quipped that these sandboxes contain quicksand as few FinTech firms graduate from them and those that do are not among the more successful FinTech firms. This may suggest a stigma towards participation in these sandboxes and may be a cause for concern if FinTech firms begin to ignore this tool.

[403] Goo, J. J., & Heo, J. Y. (2020). The impact of the regulatory sandbox on the FinTech industry, with a discussion on the relation between regulatory sandboxes and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(2), 43

7.11.4 FinTech & SMEs

7.11.4.1 The SME Sector in Singapore

SMEs are a significant section of the Singaporean economy. SMEs make up the vast majority of businesses in Singapore. Over 99 percent of businesses in Singapore are small or medium enterprises. SMEs are also the largest employers in Singapore, employing over 72 percent of private sector employees in the economy.[404] These firms are a significant contributor to Singapore's GDP, contributing 43 percent of nominal value added in 2020.[405] As such, the success of SMEs is crucial for economic stability and prosperity in Singapore.

According to the AON Inpoint's 2019 Enterprise Survey,[406] SMEs in Singapore are concerned about innovating, competition, and cash flow. Singapore has a small market with favorable start up conditions, which leads to a highly competitive environment. As a result, SMEs are concerned with keeping up with innovation to avoid becoming outdated and uncompetitive. Singaporean SMEs also have the longest waiting period between the provision of services and the receipt of payment among the economies surveyed in the Global Business Monitor 2019 Survey[407], with an average wait period of 41 days. The second longest was some distance away, with a wait period of 34 days in Hong Kong, China, emphasizing the gravity of the cashflow issues SMEs in Singapore face.

7.11.4.2 SMEs FinTech Financial Inclusion

FinTech potentially could address the financial needs of SMEs in Singapore. With an estimated credit gap of almost USD 15 billion and only 22 percent of bank loans going to SMEs, there is clear need for new financing sources for SMEs in Singapore.[408] The advent of artificial intelligence for credit scoring helps to provide financing to previously ineligible SMEs while reducing the time and the cost of applying for a loan. Similarly, FinTech firms are automating processes such as bookkeeping and cybersecurity, which were previously too expensive for SMEs to fully take advantage of.

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[404] *2020 Singapore smes statistics*. InvoiceInterchange. (2021, May 28). Retrieved November 29, 2021, from https://www.invoiceinterchange.com/2020-singapore-smes-statistics/.

[405] Ibid

[406] *Enabling Growth: Challenges Faced By Singapore's Small Businesses* (n.d). The One Brief. Retrieved from https://theonebrief.com/asia/post/enabling-growth-challenges-faced-by-singapores-small-businesses/

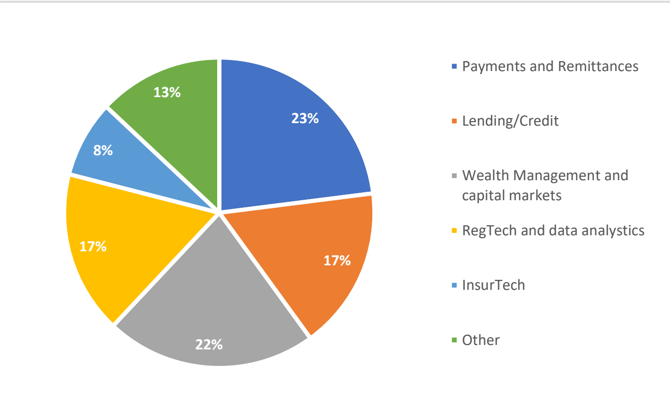
[407] Dib, Georges & Stamer, Manfred. (n.d.) *Cashflow remains a key challenge for Hong Kong, China SMEs, even with improved government support.* Euler Hermes. Retrieved October 20, 2021 from https://www.eulerhermes.com/en_global/APAC/newsroom/press-releases/cashflow-remains-a-key-challenge-for-hong-kong-smes--even-with-i.html

[408] Teo, Kevin (2020). *The perfect storm for SME digital financing in Singapore.* Entrepreneurs' Digest – A Publication by ASME. Retrieved from https://www.articles.asme.org.sg/single-post/2020/06/09/the-perfect-storm-for-sme-digital-financing-in-singapore

Payment FinTech firms may also ease competition concerns by enabling cross-border trade, but SMEs are concerned about cyber security and acceptance of payments by their customers. Payment FinTech firms are the most common in Singapore, making up about 23 percent of all FinTech firms and accounting for 68 percent of funding in the first half of 2021.[409] Coupled with government efforts to link digital payment infrastructure with neighboring Southeast Asian economies, Singaporean SMEs can leverage these payment FinTech firms to broaden their target market and relieve some of the competition for the small home market. However, a survey by the United Overseas Bank found that SMEs were concerned about their customers not embracing this new technology as well as the increased cybersecurity risk from moving to these payment platforms. [410]

Other than payment solutions, SMEs can benefit from other FinTech solutions in the economy. While the largest share of FinTech companies in the economy is Payments and Remittances (23 percent) there is lending and credit services at 17 percent. In addition, the Wealth management and capital markets has a share of 22 percent of the FinTech market, Regtech and data analytics around 17 percent and InsurTech 8 percent. Finally, around 13 percent of FinTech companies are classified as others, which could include Blockchain/DLT/ Crypto and Security & Authentication.

Figure 51: FinTech Sector Distribution



Source: Oliver Wyman Singapore FinTech Landscape 2020 and beyond

[409] *FinTech in Singapore 1H2021 – an innovation hub* (n.d). United Overseas Bank. Retrieved from https://www.uobgroup.com/techecosystem/news-insights-FinTech-in-singapore-h1-2021.html

[410] UOB. (2021, October 4). *UOB First Bank in Singapore to pilot sign ... - uobgroup.com*. UOB's pandemic response to help ASEAN SMEs on the road to recovery and growth sees it named the World's Best Bank for SMEs by Euromoney. Retrieved November 29, 2021, from https://www.uobgroup.com/web-resources/uobgroup/pdf/newsroom/2021/uob-first-bank-to-pilot-sign-with-singpass.pdf.

7.11.4.3 Regulations Affecting the SME Sector and FinTech Services

Loosening of financial restrictions for SME lending by financing companies lays the groundwork for expanding SME access to finance through FinTech partnerships. In 2017, MAS issued changes to the regulations for the three licensed finance companies in Singapore to provide them with greater capacity to serve SMEs. These finance companies typically provide more personalized loan solutions to SMEs than banks do. Some of the restrictions loosened include the increase in the aggregate and individual uncollateralized business loan limits. Finance companies were also permitted to provide current account and checking services and became eligible for electronic payment networks. By integrating with FinTech service providers, finance companies can expand the reach of their services to many more SMEs. Hong Leong Finance, one of the three finance companies, has recognized this and is seeking to partner with a FinTech for a digital banking license.[411]

The Government of Singapore will rely heavily on SME participation to realize its digital government ambitions. The government will spend up to an estimated USD 3.8 billion on info-communications technology (ICT) procurement this year, an almost 10 percent increase from FY20's procurement value of USD 3.5 billion.[412] This spending will go towards transforming government digital services used by both citizens and businesses, and re-engineering government digital infrastructure to support modern application development. It will build on the momentum generated by past years' investments and serve to lock in the digitalization gains brought about by the COVID-19 pandemic. Small and Medium Enterprises (SMEs) will be able to participate in close to 83 percent of the total potential procurement opportunities.

7.11.5 Gender-based Impact of FinTech Financial Inclusion

Women-focused FinTechs have emerged to support the large female migrant worker population. As of 2018, there were 240,000 female migrant domestic workers (MDWs) in Singapore.[413] These workers are primarily from neighboring ASEAN economies and migrate to Singapore without their families due to Singapore's strict immigration laws. As such, they routinely send remittances and would typically have to endure long lines at money transfer outlets. FinTech firms like Toast, a remittance processing app, emerged to facilitate quicker transactions for migrant domestic workers (MDWs). The company hopes to use the data gathered from remittances to eventually provide credit services to migrant workers, who lack

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[411] Sanglap, Ranina (2019). *Hong Leong Finance seeks FinTech partner for Singapore digital bank license.* S&P Global Market Intelligence. Retrieved from https://www.spglobal.com/marketintelligence/en/news-insights/trending/a21j0fo3qwhjlxssq6l2kw2

[412] https://www.tech.gov.sg/media/media-releases/2021-06-23-increased-ict-spending-in-fy2021-to-accelerate-government-digitalisation

[413] *Thematic Report on Domestic Servitude of Migrant Women and Girls – Humanitarian Organization for Migration Economics* (2018). Retrieved October 18, 2021, from https://www.ohchr.org/Documents/Issues/Slavery/SR/DomesticServitude/CSO/Reply percent20HOME.pdf

traditional credit histories. Other such firms that target female workers in Singapore include MissKaya, a women-only robo-advisory FinTech that provides investment and budgeting guidance as well as typical banking services such as a debit card. Newly launched FinTech Lucy, aims to be a one-stop-shop for all female financial needs, providing debit card services as well as loan management, salary advances, remittance services, and business growth tools.

7.11.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Singapore.

Digital payments have become the norm in Singapore. MAS found that 80 percent of people and 75 percent of businesses had begun using PayNow, a platform created by a conglomeration of banks to allow payments using just a phone number of personal ID number. Monthly transactions passed USD 3 billion in December 2020, which was four times the level in July 2019.[414] This trend is expected to continue as the Singapore government intensifies efforts to connect digital payment infrastructure in Singapore to infrastructure in other economies.

The introduction of digital banking licenses has the potential to drive down costs for financial services and improve customer service. Although Singapore does not have a significant unbanked population, the inclusion of digital banks into the banking ecosystem may force traditional incumbents to improve the services offered, to avoid losing market share. These licenses come at a time when customer satisfaction with banks in Singapore has fallen by almost 2 percent, according to a study by the Singapore Management University.[415]

7.11.7 The Impact of COVID-19 on FinTech Services

COVID-19 had little effect on the rising trends in FinTech growth and financing in Singapore. According to a 2020 report[416], 66 percent of FinTech firms surveyed reported that they had seen an increase in demand for their services during the pandemic. A report by United Overseas Bank (UOB), PwC Singapore and the Singapore FinTech Association[417] found that 4 out of 5 FinTech firms planned to continue with expansion plans in the midst of the pandemic. Despite the pandemic, FinTech firms were still able to attract investments, even as funds dried up in the rest of the continent. As investments in the rest of Asia fell in the second quarter of

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[414] *FinTech in Singapore 1H2021 – an innovation hub* (n.d). United Overseas Bank. Retrieved from https://www.uobgroup.com/techecosystem/news-insights-FinTech-in-singapore-h1-2021.html

[415] *What are the prospects for Singapore's digital banks?* (2021). Kapronasia. Retrieved from https://www.kapronasia.com/asia-banking-research-category/what-are-the-prospects-for-singapore-s-digital-banks.html

[416] *Singapore FinTech landscape 2020 and beyond - Oliver Wyman*. (n.d.). Retrieved October 18, 2021, from https://www.oliverwyman.com/content/dam/oliver-wyman/v2/publications/2020/dec/singapore-FinTech-landscape-2020-and-beyond.pdf

[417] *Four in five FinRech firms in ASEAN set on expanding despote the COVID-19 pandemic: UOB, PwC and SFA report* (n.d). United Overseas Bank, PwC Singapore, Singapore FinTech Association. Retrieved from https://www.uobgroup.com/web-resources/uobgroup/pdf/newsroom/2020/Four-in-five-FinTech-firms-in-ASEAN-set-on-expanding-despite-the-COVID-19-pandemic-UOB-PwC-and-SFA-report.pdf

2020, Singapore saw investments grow over four-fold, showing the resilience of the FinTech industry and the confidence of investors in its growth.

Significant government support was partly responsible for the resilience of FinTech during the COVID-19 pandemic. As the pandemic raged on, businesses began to look to digital platforms for reaching costumers and conducting business. Part of a broader COVID-19 relief package by the Singapore government was to commit over USD 365 million to digital transformation for individuals and businesses in Singapore. This included a Productivity Solution Grant and an Enterprise Development Grant (EDG) covered 80 percent of the costs of implementing digital solutions. Funds were also assigned to an e-commerce program that defrayed 90 percent of eligible costs for local brick-and-mortar SMEs who had no online presence.

7.11.8 Emerging FinTech Companies in Singapore

Singapore is positioning itself as a major player in the FinTech industry and is establishing itself as one of the most important global centers for FinTech, with fast industry growth in Asia. The government and the financial supervisory authority actively support innovation in Singapore. Thus, it has become a testing ground for new financial technologies. In the table below we list a few of the FinTech companies that provide services to SMEs and should be kept an eye on for the upcoming years.

Table 42: Emerging FinTech Companies in Singapore

Emerging Company	Description
Coda Payments	- Helps digital content providers monetize their products and services - Currently valued at USD 1.4 billion, making it a unicorn[418] - Coda Payments helps SMEs by assuming the responsibilities of completing the steps of accepting and receiving online digital payments
Funding Societies	- Funding Societies is a P2P lending platform for small businesses to get financing - Valued at USD 350 million as of 2017[419] - The company has already processed USD 2 billion in SME loans and has a presence in Indonesia, Malaysia, and Thailand
Horangi	- Horangi provides cybersecurity-as-a-service through cloud software for small businesses - Current valuation unknown, though recently raised USD 20 million in Series B funding[420] - SME digitization is expected to increase the demand for cybersecurity services, and with many not able to hire dedicated staff, FinTech like Horangi may be the preferred solution

[418] Krouse, Sarah (2021). *Collaboration Startup Coda Doubles Valuation to USD1.4 Billion in New Funding.* The Information. Retrieved from https://www.theinformation.com/briefings/cdfa72

[419] Wirdana, A. & Maheshwari, A. (2019). *P2P lender Funding Societies said to seek USD50m in fresh funding.* DealStreetAsia. Retrieved from https://www.dealstreetasia.com/stories/funding-societies-seriesc-136968/

[420] Mulia, Khamila (2020). *Singaporean cybersecurity company Horangi notches USD 20 million investment.* KrASIA. Retrieved from https://kr-asia.com/singaporean-cybersecurity-company-horangi-notches-USD20-million-investment

Lucy	- Lucy provides a comprehensive suite of business solutions for women employees and entrepreneurs, including salary advances, fee-free accounts and a debit card - Valuation of USD 10 million as of 2021[421] - Lucy's products are specialized for women, accounting for variables that differ across gender such as longer life expectancy in regard to wealth management

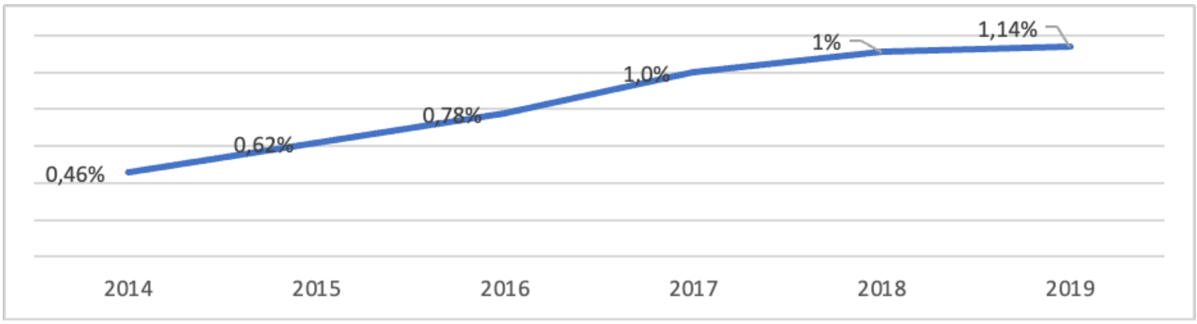
[421] Phua, Rachel (2021). *After USD1m from EmergeVest, Lucy aims to be a FinTech app for unbanked women.* DealStreetAsia. Retrieved from https://www.dealstreetasia.com/stories/lucy-raises-1m-emergevest-255670/

7.12 THAILAND

7.12.1 DFS Context and Trends

The FinTech industry is reasonably prevalent in the economy and the government has been encouraging the development of the sector. In 2019, there were around 140 FinTech enterprises with half created that same year[422]. The government has introduced multiple regulations that support the development of FinTech enterprises including regulatory sandboxes. The research and development spending in the economy has been gradually increasing, reaching 1.14 percent of the economy's GDP in 2019 (see figure below). Universities in Thailand have started developing technology-intensive programs in partnership with leading tech companies[423]. For instance, the Huawei Technologies (Thailand) Co. Ltd. is working with the Chiang Mai University (CMU) to transform it into a high-standing smart university using the most innovative digital platforms[424]. The government created the Digital Economy Promotion Agency (depa) in 2017: an extensive framework for the digital transformation of the Thai economy, both from a member economy government agency and processes, as well as establishing links/ partnerships toward achieving this goal with domestic and foreign companies[425].

Figure 52: Evolution of R&D Spending in Terms of Percentage GDP



Source: National Research Council of Thailand

In addition, Thai banks are highly involved in the development and expansion of the FinTech sector through funding of accelerators and sourcing. In 2018, there were 13 start-up

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[422] Ma, W. (2021, May 10). *Expanding Thai Markets: Financial Technology*. HKTDC research. Retrieved November 4, 2021, from https://research.hktdc.com/en/article/NzMzODE1MDk5

[423] *Thailand fintech landscape report sanitized by global ...* (2019.). Retrieved November 2, 2021, from https://www.researchgate.net/publication/337971279_Thailand_FinTech_Landscape_Report_Sanitized_by_Global_Markets_EY_Knowledge

[424] Limited, B. P. P. C. (2021, March 24). *Huawei partners with Chiang Mai University to develop the 5G Smart University*. Retrieved November 2, 2021, from https://www.bangkokpost.com/thailand/pr/2088903/huawei-partners-with-chiang-mai-university-to-develop-the-5g-smart-university

[425] *Thailand fintech landscape report sanitized by global ...* (2019.). Retrieved November 2, 2021, from https://www.researchgate.net/publication/337971279_Thailand_FinTech_Landscape_Report_Sanitized_by_Global_Markets_EY_Knowledge

accelerator programs in Thailand and a total of USD 570 million venture fund to aid the local start-up ecosystem in 2019[426]. In May 2018, Siam Commercial Bank doubled its venture fund size to USD 100 million[427]. Kasikorn Bank launched a USD 30 million fund, Beacon fund to invest in FinTech companies[428]. In March 2017, Bangkok Bank launched its InnoHub Accelerator with a focus on FinTech, it is a 12-week program provides start-ups with mentoring from Bangkok Bank, Bualuang Ventures, and Neset. Start-ups are given the opportunity to secure a proof-of-concept with the bank and pitch for investment[429]. The area of focus for this accelerator program includes Creation of Unique Customer Experience, Digitization and Automation, Future SME Solution, Innovative Payment, Discovery of Cutting-Edge Technology[430].

7.12.2 The FinTech Ecosystem in Thailand

7.12.2.1 Main Actors in the FinTech Ecosystem

There are 5 main actors in the FinTech ecosystem in Thailand: i) FinTech Firms; ii) FinTech Collaborator; iii) Regulators; iv) Financiers and v) End-consumer of FinTech solution. The first is the FinTech firms such as Omise, which offer different FinTech solutions in the market. The second type of actor is FinTech collaborators, which are traditional financial institutions and large technology companies who are involved in providing FinTech services either through collaborations with existing FinTechs, mergers and acquisitions, or developing in-house FinTech departments from scratch. An example is the Innohub Accelerator, as mentioned earlier. Third are the regulatory authorities that oversee the activities of firms operating in the finance and technology space. The fourth actor group is the financiers that invest in the growth of FinTech firms. This includes venture capitalists, angel investor like the Beacon Venture Capital. The final actor is the end consumer of FinTech services, which could be individuals, SMEs, large enterprises, governments, or non-profit organizations.

7.12.2.2 FinTech Usage

FinTech services in Thailand, with the help of the economy's high levels of connectivity, have been embraced by the general populace. The internet banking services access stood at 68.1 percent, with 45.3 percent of the population conducting internet payments such as apple pay[431] This ranks Thailand first globally in the use of banking and financial service applications. On the top of it, COVID-19 has also accelerated the use of mobile banking and e-wallet

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[426] Ibid
[427] *Thailand fintech landscape report sanitized by global ...* (2019.). Retrieved November 2, 2021, from https://www.researchgate.net/publication/337971279_Thailand_FinTech_Landscape_Report_Sanitized_by_Global_Markets_EY_Knowledge
[428] Ibid
[429] Ibid
[430] Ibid
[431] Ibid

platforms[432]. The internet penetration rate in 2021 was around 69.5 percent and it was the highest in ASEAN[433], growing by 7.4 percent from 2020. It is also important to note that 97.7 percent of internet users access the internet via mobile devices.[434] Thailand has the highest fixed internet connection speed in the world according to the global digital report 2021.[435]

7.12.3 FinTech Regulatory Framework

7.12.3.1 Key Regulatory Actors

The supervision and enforcement of the FinTech Provisions are entrusted to two authorities, depending on the services the FinTech companies provide to their customers:

Table 43: Key Regulatory Actors in Thailand

Regulator	Role
The Bank of Thailand (BOT), Central Bank of Thailand	The BOT has the power to supervise, examine, and analyze the financial status, performance and risk management systems of financial institutions to enhance the stability of the financial status of Thailand. Thus, FinTech activities that are related to financial institutions will be predominantly supervised by the BOT, including digital lending and peer-to-peer lending, payment systems, e-wallets, e-money and e-payments.
The Securities and Exchange Commission (SEC)	Regulatory unit supervising capital markets. Capital markets are the main mechanisms for efficient mobilization, allocation, and monitoring the utilization of Thailand's economic resources. The SEC also governs businesses/FinTech that crowdfund, including the digital asset industry (cryptocurrencies and digital tokens).

7.12.3.2 Regulations Related to FinTech Services

The FinTech industry in Thailand is not regulated by a specific broad FinTech regulation, but FinTech companies have to comply with certain regulations. The latter do target specific FinTech solutions such as P2P lending, digital lending, and electronic transactions. In addition, the Thai government introduced regulation protective regulations such as data protection and regulation related to cybersecurity.

[432] *Fintech business and investment in Thailand*. MPG. (2021, September 3). Retrieved November 2, 2021, from https://mahanakornpartners.com/FinTech-business-and-investment-in-thailand/
[433] Kemp, S. (2021, October 22). *Digital in Thailand: All the statistics you need in 2021 - DataReportal – global digital insights*. DataReportal. Retrieved November 2, 2021, from https://datareportal.com/reports/digital-2021-thailand
[434] Kemp, S. (2021, November 4). *Digital in Thailand: All the statistics you need in 2021 - DataReportal – global digital insights*. DataReportal. Retrieved November 29, 2021, from https://datareportal.com/reports/digital-2021-thailand.
[435] Ibid

Table 44: Regulations Related to FinTech Services in Thailand

Key Area of Regulation	Regulation Name	Details
P2P Lending	BOT Notification No SorNorSor. 4/2562	This notification prescribes the criteria for FinTech businesses engaged in peer-to-peer lending platforms and the other participants in the platform[436]. These include participation in BOT's regulatory sandbox, license application from MOF through BOT, operating as an online marketplace for lenders and borrowers where the latter must be individuals.
Crowdfunding	the Capital Market Supervisory Board ("CMSB") Notification No. TorJor.21/2562 "Re: Rules Regarding Securities Offerings Through Crowdfunding Portals"	The CMSB Notification (as amended) covers both equity and debenture crowdfunding of private and public limited companies, including FinTech companies, through crowdfunding. A crowdfunding portal operator must obtain license from the SEC Office.[437]
Payment Services	Payment System Act B.E. 2560 (2017) ("Payment System Act")	Introduced in 2018 to regulate different payment services including FinTech payment services which include: provision of credit cards, debit cards, or ATM card services, e-money services; provision of accepting electronic payments for and on behalf of others; provision of e-money transfer services; and other payment services which may affect payment systems or the public interest[438].
Electronic transactions	The Electronic Transactions Act B.E. 2544. (2001) ("Electronic Transactions Act")	Supports the legal validity of electronic transactions performed via electronic systems. If a transaction is done electronically (online) in accordance with the rules and procedures under the Electronic Transactions Act, the transaction is deemed to be binding, as if an agreement has been entered into in accordance with other laws governing transactions entered into by other platforms or means[439].

[436] *Fintech 2021 comparisons*. Comparisons | Global Practice Guides | Chambers and Partners. (n.d.). Retrieved November 2, 2021, from https://practiceguides.chambers.com/practice-guides/comparison/626/6503/10265-10267-10280-10284-10289-10292-10295-10305-10310-10314-10317-10320-10329
[437] Source: Thailand FinTech Laws and Regulations https://iclg.com/practice-areas/FinTech-laws-and-regulations/thailand
[438] *Fintech 2021 comparisons*. Comparisons | Global Practice Guides | Chambers and Partners. (n.d.). Retrieved November 2, 2021, from https://practiceguides.chambers.com/practice-guides/comparison/626/6503/10265-10267-10280-10284-10289-10292-10295-10305-10310-10314-10317-10320-10329
[439] Ibid

Key Area of Regulation	Regulation Name	Details
Sandboxes:	2019 regulatory sandbox guidelines Insurance Regulatory Sandbox, B.E. 2021	The "own sandbox" was introduced in addition to the existing regulatory sandbox under the BOT's supervision. The regulatory sandbox is a project for financial service providers including FinTech companies to test their financial services that incorporate new technologies under controlled conditions.[440] SEC Sandbox allows applicants to test their KYC technology for no longer than 1 year under the supervision of SEC.
Crypto assets/ Digital Currencies	Emergency Decree on Digital Asset Decree B.E. 2561 (2018) ("Digital Asset Decree")	Introduced to regulate offerings of digital assets and businesses undertaking digital-asset-related activities. Its objective is to enhance the standards of the digital asset market to be in line with international standards and to protect players in the market. Cryptocurrencies and digital tokens are regulated by the Digital Asset Decree.[441]
Digital Lending	Circular No BOT.FhorGorSor. (01) Wor. 977/2563 Re: Criteria, Procedures and Conditions on Digital Personal Loan Business Operations	The purpose of this BOT Circular is to relax the criteria for personal loans for those who do not have regular income or proof of income, or those without collateral, and to grant flexibility to personal loan providers in providing personal loans in an electronic form.[442] This regulation may help increase FinTech loans to SMEs that lack collateral.
Cybersecurity	Cyber Security Act B.E. 2562 (2019)	Cyber threats shall be subject to investigation and the private operator may be required to provide access to relevant computer data or computer systems, or other information relating to the computer system monitor the computer or computer systems; and allow officials to test the operations of the computer or computer system or seize a computer or a computer system.

[440] Ibid

[441] Group, G. L. (n.d.). *Fintech 2021: Laws and regulations: Thailand: ICLG*. International Comparative Legal Guides International Business Reports. Retrieved November 2, 2021, from https://iclg.com/practice-areas/FinTech-laws-and-regulations/thailand

[442] *Fintech 2021 comparisons*. Comparisons | Global Practice Guides | Chambers and Partners. (n.d.). Retrieved November 2, 2021, from https://practiceguides.chambers.com/practice-guides/comparison/626/6503/10265-10267-10280-10284-10289-10292-10295-10305-10310-10314-10317-10320-10329

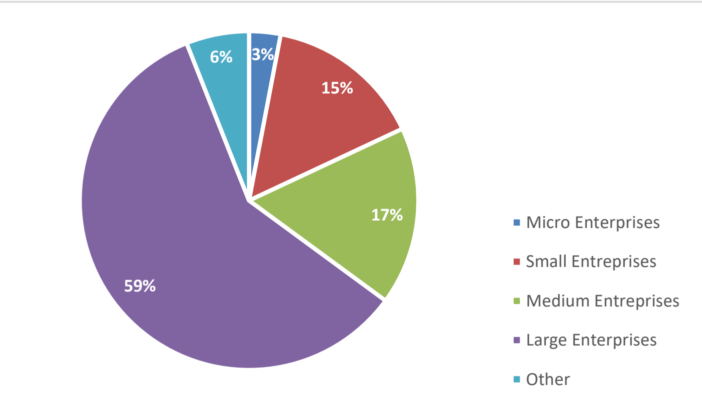
Key Area of Regulation	Regulation Name	Details
Data Protection	Personal Data Protection Act B.E. 2562 (2019)	It establishes a legal framework which protects personal data of individuals and allows businesses to realize economic values from personal data.

7.12.4 FinTech & SMEs

7.12.4.1 The SME Sector in Thailand

The SME sector represents a 15 percent share of total enterprises and 32 percent of the GDP. The table below presents the classification of MSMEs and large enterprises according to their number of employees and their sector, e.g., manufacturing, services, wholesale, and retail. In 2019, around 15 percent of all Thai enterprises were SMEs, 0.5 percent were large and finally micro enterprises constituted around 84.5 percent of the market. However, large enterprises accounted for almost 59 percent of the GDP, compared to 32 percent by SMESs and only 3 percent by micro enterprises.

Figure 53: Share of GDP by Enterprise Size



Source: Office of SMEs Promotion, 2020

Table 45: Firm Size Specification

Firm Size	Manufacturing	Services, wholesale, and retail
Micro	Less or equal to 5	Less or equal to 5
Small	Less or equal to 50	Less or equal to 30
Medium	Less or equal to 200	Less or equal to 100
Large	More than 200	More than 100

Source: Office of SMEs Promotion, 2020

SMEs are able to access financing through commercial bank loans as well as through instruments such as crowdfunding or venture capital, but they are vulnerable to high interest rates and structural changes. This is suggested by the fact that in 2017, outstanding SME loans from commercial banks totaled THB 4,221 billion, representing 50.47 percent of all outstanding business loans[443]. Furthermore, SMEs are able to source funds from other financial institutions, such as the capital market, crowdfunding and venture capital funds[444]. Some SMEs still face problems including collateral constraints and a lack of credit history, which limit their access to bank loans[445]. The Market for Alternative Investments (MAI) is a stock exchange for smaller firms. It provides SMEs with a platform to raise capital at a lower paid-up capital than in the Stock Exchange of Thailand[446]. Crowdfunding is another channel for SMEs to access funds. Under the supervision of the Securities and Exchange Commission, companies may raise funds from a pool of investors through equity-based crowdfunding. However, SMEs in Thailand are vulnerable to either higher interest rate or lower revenues. In addition, they are vulnerable to structural changes in the business environment as their ability to compete through these changes are limited[447].

7.12.4.2 FinTech-Based Financial Inclusion of SMEs

In 2017 the Thai government set up their 20-Year National Plan with the aim of becoming a high-income economy [448] through increased access to finance and innovation/technology to SMEs. The plan includes the Thailand 4.0 which represents a new economic mode focused on an innovation driven economy[449]. The polices being introduced include a shift from traditional farmers to "Smart Farmer"[450]. Similarly, the plan discusses the transformation of traditional SMEs into "Smart SMEs" and increase the revenue and contribution of SMEs from 37 percent of total GDP to 50 percent of member economy´s GDP within 10 years. The government plans to develop SMEs through financial support for SMEs that have potential but lack of financial liquidity, develop knowledge and management skills, enhance digital

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[443] *Home*. Thailand | Financing SMEs and Entrepreneurs 2020 : An OECD Scoreboard | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/2c7b8253-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F2c7b8253-en

[444] Ibid

[445] Ibid

[446] Ibid

[447] *Home*. Thailand | Financing SMEs and Entrepreneurs 2020 : An OECD Scoreboard | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/2c7b8253-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F2c7b8253-en.

[447] Ibid

[448] *20-year national strategy (2017-2036)*. sme. (n.d.). Retrieved November 2, 2021, from https://www.sme.go.th/en/page.php?modulekey=378.

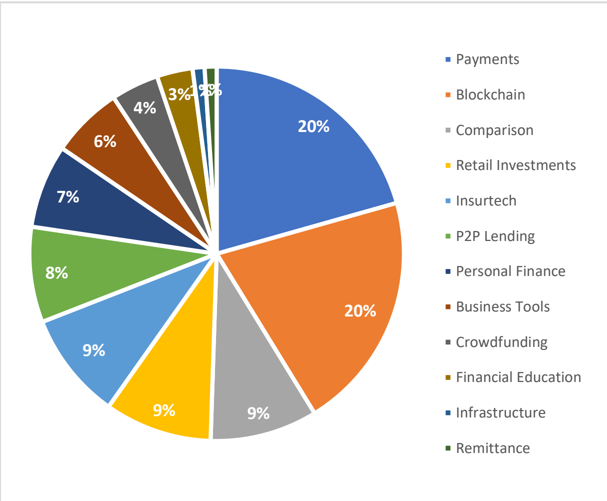
[449] Somsak, G. A. R. N. J. A. N. A. K. A. R. N. (1970, January 1). *How Hitachi drives Thailand 4.0: Article Information: J-Global*. Hitachi Review (Web). Retrieved November 2, 2021, from https://jglobal.jst.go.jp/en/detail?JGLOBAL_ID=201902251637410356.

[450] -thailand 4.0-. (n.d.). Retrieved November 2, 2021, from https://thaiembdc.org/thailand-4-0-2/.

transformation, create Big Data and develop open innovation for SMEs.[451] The government wants to switch from traditional services to "High Value Services" [452]. Finally, they introduced they aim to develop startups at all stages with the policy to push Thailand towards becoming "Center of Connectivity and Destination for Startup Investment in ASEAN"[453].

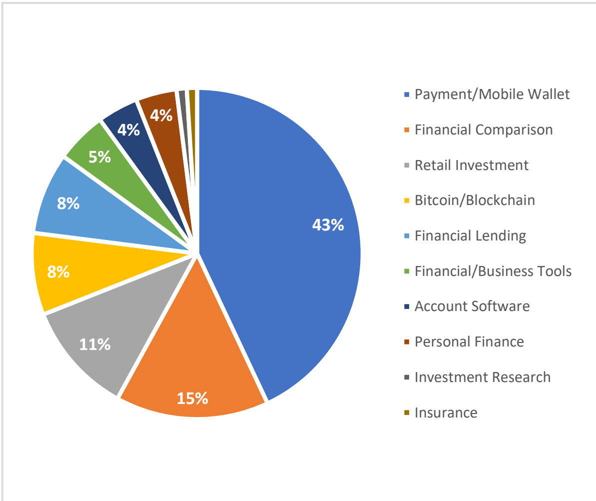
The FinTech market in Thailand is well positioned to offer SMEs different solutions including enhanced access to finance. Around 20 percent of FinTech businesses are specialized in payment services and another 20 percent in Blockchain in 2020 compared to respectively 43 percent and 8 percent in ASEAN in 2019. In comparison, retails investments and insurtech FinTechs constitute each 9 percent of the market followed by P2P lending at 8 percent. Finally crowdfunding FinTech account for a small share of the market at 4 percent.

Figure 55: Thailand FinTech Sectors



Source: Singapore FinTech, 2020

Figure 54: Composition of the ASEAN FinTech Sector



Source: World Bank, 2019

[451] Ibid
[452] thailand 4.0-. (n.d.). Retrieved November 2, 2021, from https://thaiembdc.org/thailand-4-0-2/.
[453] Ibid

7.12.4.3 Regulations affecting the SME Sector and FinTech Services

The Bank of Thailand revised its Regulations on Venture Capital and FinTech Businesses of Financially Consolidated Groups[454] and introduced other regulations providing an opportunity for companies to access funding from investors, including financial institutions. Venture capital funds in Thailand benefit from certain tax privileges such as the exemption from income tax[455]. The objectives of the revision were to increase unlisted companies' access to alternative funding, especially for SMEs and FinTech firms, and to enhance effective development of financial services provided by financial institutions and conglomerates[456]. The Thai Credit Guarantee Corporation (TCG) provides credit guarantees for viable SMEs to ensure that SMEs with insufficient collateral have access to bank loans. The Business Collateral Act B.E. 2558 (2015) simplified the process of security interest creation and expanded the types of collateral which SMEs can register and use to secure loans. The Government of Thailand enacted reforms to bring SMEs and lower income households into the formal financial sector. Mobile banking initiatives are targeting the retail SME segment. Traditional retailers are also using "quick response" (QR) codes to accept payments, alleviating challenges with liquidity management.

7.12.5 Gender-based Impact of FinTech Financial Inclusion

Men and women are moderate users of financial services and men use more of some services than women according to the Global Findex Database 2017. Around 84 percent of men and 80 percent of women of the age of 15 own an account in a financial institution. In addition, 62 percent of both men and women have made or received a digital payment in the last year and around 60 percent of the population owns a debit card. Finally, the share of the Thai population that borrows is higher for women than for men, around 14 percent of men has borrowed from a financial institution in contrast to 16 percent for females. In addition, Thailand ranked 7th in APEC for best economies for women in FinTech[457] although the difference in financial literacy is small, 28 percent for men and 26 percent for women[458].

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[454] *Home*. Thailand | Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/2c7b8253-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F2c7b8253-en.

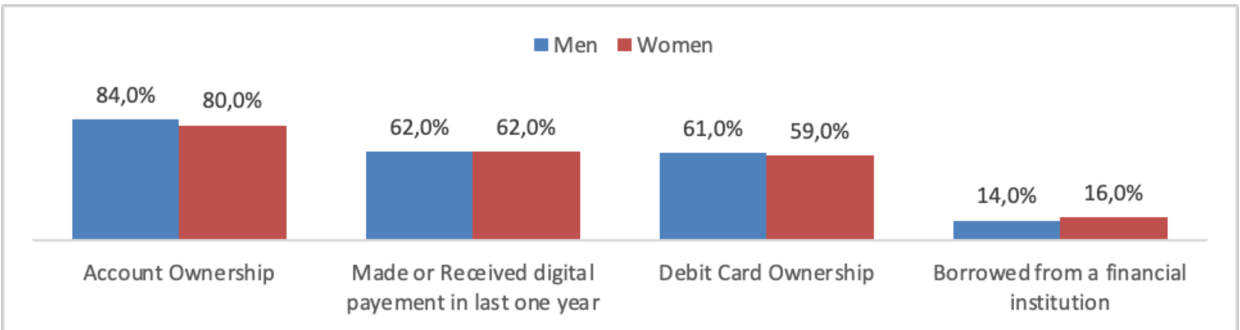
[455] Ibid

[456] *Home*. Thailand | Financing SMEs and Entrepreneurs 2020: An OECD Scoreboard | OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/sites/2c7b8253-en/index.html?itemId= percent2Fcontent percent2Fcomponent percent2F2c7b8253-en.

[457] Team, T. A. S. E. A. N. P. (2020, August 29). *More women tapping on Fintech?* The ASEAN Post. Retrieved November 2, 2021, from https://theaseanpost.com/article/more-women-tapping-FinTech.

[458] S&P Global FinLit Survey, 2016

Figure 56: Gender Split and Usage of Financial Services



Source: Global Findex Database, 2017

7.12.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Thailand

The Thai government established the Digital Economy Promotion Agency (depa[459]) under the Digital Development for Economy and Society B.E. 2560 (2017), which aims to support the development of digital industry and innovation[460]. It will promote digital technology adoption to benefit the economy's market, society, culture, and security, according to Article 35 of the Act. A commission, whose members are appointed by the Minister of Digital Economy and Society, is authorized to regulate and ensure the agency's performance. It has several tasks including the key tasks of developing a strategic plan for the promotion of the digital economy in accordance with member economy government policy and plans; promoting and supporting private investment and business operations related to the digital industry and innovation[461].

Table 46: depa's Different Programs for Digital Start-ups

Program	Details
depa JumpStart	The digital startup incubation program that offers opportunities for entrepreneurs and interested people from all over the economy. depa Jumpstart combines online and offline learning for entrepreneurs or the general people to confidently start a Digital Startup business[462].
depa Accelerator Program x Techsauce	Startup support program that depa collaborates on with Techsauce, to find 20 Startup teams to join the program with a global mentor through a private and public sector partnership [463].

[459] How it is officially written
[460] *Depa Thailand - home*. (n.d.). Retrieved November 2, 2021, from https://www.depa.or.th/th/home.
[461] Ibid
[462] *Depa Thailand - home*. (n.d.). Retrieved November 2, 2021, from https://www.depa.or.th/th/home.
[463] Ibid

Tech Tycoon+	Network development activity for digital startups and technology entrepreneurs that are ready to grow in both domestic and international markets. It consists of intensive scale up business training activities, business matching activities to expand business opportunities and one-to-one mentoring activity to prepare Digital Startup entrepreneurs to grow into regional and global enterprises[464].
Startup Battleground	Hackathon event held at Digital Thailand Big Bang. This is due to the cooperation between the public sector, the Thai private sector and the global private sector, including the Digital Economy Promotion Agency (depa) and Hubba Company Limited (HUBBA Thailand) together with the leading Techstars (Techstars) accelerator. World class event with the objective of raising ideas to create new innovations for the top 10 target industries (S-Curve) that will benefit the economy's development.

7.12.7 The Impact of COVID-19 on FinTech services

The covid-19 pandemic boosted the capacity and the adoption of FinTech in Thailand, as the pandemic created a need for digital services. As the pandemic developed, Thai people shifted towards digital solutions for their payments such as e-commerce, digital payments (contactless) and instant payments, plus real-time payments surged by 104 percent[465]. Government initiatives and social distancing practices to reduce the use physical cash were in place during the pandemic. An example of an important government initiative includes the member economy government PromptPay e-payment system, which has since been adopted by Thailand's leading private banks. The Thailand Post reports that with these strong reactions to the pandemic, e.g., a strong cashless transaction system adoption trend shows that the people of Thailand are anticipating a thriving FinTech future.

7.12.8 Emerging FinTech Companies in Thailand

The table below showcases some of the best Thailand based FinTech companies providing services to SMEs. These startups and companies are taking a variety of approaches to innovating the FinTech industry but are all companies well worth a follow.

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[464] Ibid

[465] Limited, B. P. P. C. (2021, July 28). *Thailand's fintech comes of age*. https://www.bangkokpost.com. Retrieved November 2, 2021, from https://www.bangkokpost.com/opinion/opinion/2155859/thailands-fintech-comes-of-age.

Table 47: Emerging FinTech Companies in Thailand

Name of Company	Services
FlowAccount	App-based accounting solutions for SMEs to manage accounts. It provides the ability to post the expenses by uploading a photograph of the invoice, visualization for metrics such as expenses, receivables, and more. Its pricing model is based on the number of users and features required in the platform.
Omise	A payment API provider, which can be integrated into merchant websites, blogs or even social networks. Omise offers white label payment solutions and real-time fraud detection.
Finnomena	Online platform to get expert advice on investments in the public market. The platform also gives financial planning and suggestions to the retail investors.
AmiLabs	Developed the technology to digitize and transact on the bitcoin blockchain. It digitizes securities, commodities, currencies on the blockchain which are to be used for investments, trading, and payment.

7.13 USA

7.13.1 DFS Context and Trends

FinTech is transforming the US financial sector, including the way people lend, invest, opt for loans, fund start-ups, and even buy insurance. This FinTech-driven transformation of the US financial system has been going on since the late 1990s. On average, one out of three digitally active consumers use two or more financial technology services. Financial markets in the United States are the largest and most liquid in the world. In 2018, finance and insurance represented 7.4 percent (or USD 1.5 trillion) of U.S. gross domestic product. Eight of the top ten states by percentage of financial decision makers that report having a FinTech account are in the South, with New York and California rounding out the list. Growth in the number of customers reporting having a FinTech account over the pre-COVID-19 base has also been significant in the South.[466] As of 2018, the United States accounts for 57 percent of the global FinTech market. Digital payment is the leading market segment, with a total transaction value of USD 880 billion as of 2018.[467] However, the neobanking segment is growing quickly in the United States and is expected to eclipse the digital payment segment by 2024.[468] In general, the United States FinTech sector is relatively fragmented, with a wide array of products, firms, and consumers across markets that include payments, roboadvising, cryptocurrency, and digital insurance. [469]

The FinTech market in the United States continues to grow, fueled by the significant interest from investors and growth in transaction values. Investment in US based FinTech companies reached USD 14.2 billion across 427 deals during the first half of 2018, with USD 5 billion in venture funding as investments made into startups in FinTech emerging segments, such as regtech and block chain, as well as late-stage companies. [470] Transaction value has grown across almost all sectors since 2017, and this trend is expected to continue. Neobanking is the fastest growing segment, with an annual growth rate of 71.6% in 2020. [471] Average transaction value per user has also grown, with growth being highest in the digital investment sector.[472]

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[466] Krivkovich, A., O. White, Z. Townsend, J Euart (2020). "How US customers' attitudes to FinTech are shifting during the pandemic." Mckinsey & Company. https://www.mckinsey.com/industries/financial-services/our-insights/how-us-customers-attitudes-to-fintech-are-shifting-during-the-pandemic
[467] Mordor Intelligence https://www.mordorintelligence.com/industry-reports/us-FinTech-market
[468] Statista (2021). https://www.statista.com/outlook/dmo/fintech/united-states
[469] Mordor Intelligence https://www.mordorintelligence.com/industry-reports/us-FinTech-market
[470] Ibid.
[471] Statista (2021). https://www.statista.com/outlook/dmo/fintech/united-states
[472] Ibid.

7.13.2 The FinTech Ecosystem in the USA

7.13.2.1 Main Actors in the FinTech Ecosystem

The US FinTech ecosystem is large and diverse, with a wide range of entrepreneurial, regulatory, and investment actors. Many new FinTech products are brought to the market by tech companies and startups in the United States. Startups and tech companies introduce innovation into the US market, and may range from new, growing companies like Paxos to established tech firms that began as startups, like PayPal. Large banks and corporations like Wells Fargo also make extensive use of FinTech and often develop their own internal or external products. These banks and companies sometimes bring innovative new products to market, but more often they drive widespread adoption of existing FinTech, such as online bill payments. Investment is often provided by venture capitalists including individual investors such as Peter Thiel or larger firms such as Berkshire Hathaway. Sometimes firms may choose to go public or find other funding sources. Numerous regulators have jurisdiction over some aspect of FinTech, and regulators may exist at the federal or state level. An example of a regulatory actor would be the Securities and Exchange Commission (SEC), which regulates securities and investment companies. Finally, advisory bodies serving regulators and policymakers exist. An example of an advisory body would be the Conference of State Bank Supervisors, which although does not have policymaking powers, but can coordinate actions among the state regulators who make up their membership.[473]

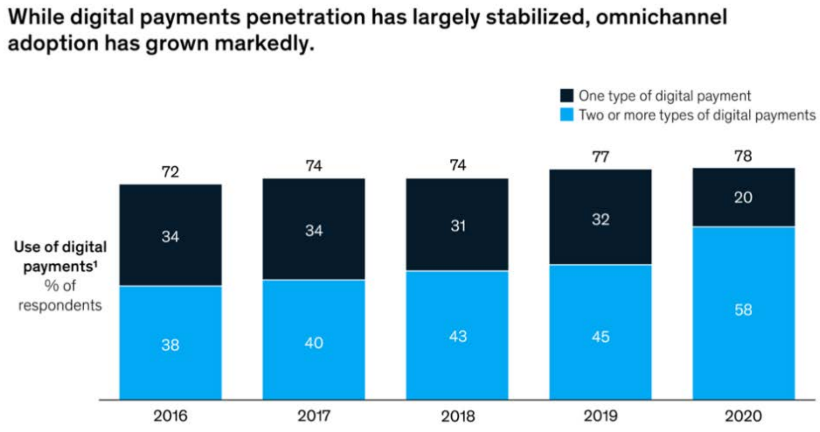
7.13.2.2 Overall FinTech Usage

FinTech use is high among American consumers and businesses, with many different services and options to choose from. More than three-quarters of Americans use some form of digital payment, which is defined as any of the following: browser-based and in-app online purchases, in-store checkout using a mobile phone and/or QR code, and person-to-person payments. Although penetration of digital payments reached 78 percent in 2020, recent growth has been incremental, implying that some systemic barrier must be overcome to reach the remaining group. Full-service online banking and digital investment services are also popular and have seen higher growth than payments. Online lending has the lowest total uptake, but the highest overall growth since the COVID-19 pandemic[474].

[473] ICLG (2021) https://iclg.com/practice-areas/FinTech-laws-and-regulations/usa

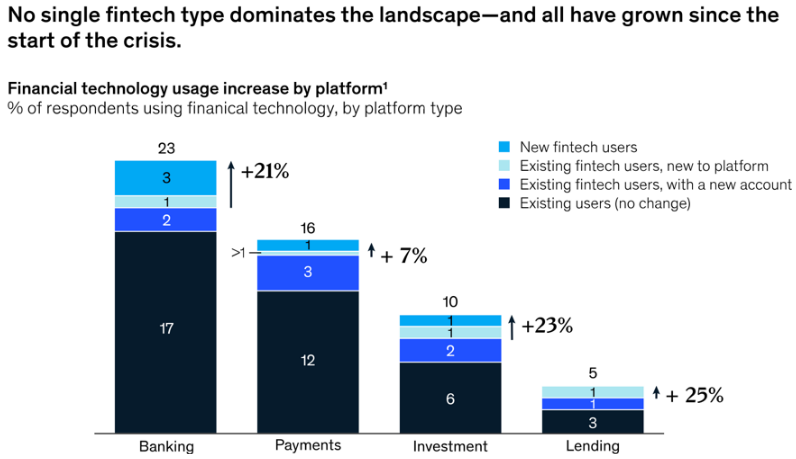
[474] Krivkovich, A., O. White, Z. Townsend, J Euart (2020). "How US customers' attitudes to FinTech are shifting during the pandemic." Mckinsey & Company. https://www.mckinsey.com/industries/financial-services/our-insights/how-us-customers-attitudes-to-fintech-are-shifting-during-the-pandemic

Figure 57: Total Use of Digital Payments by Number of Types Used, 2016-2020.



Source: McKinsey and Company

Figure 58: Growth in US FinTech by Platform.



Source: McKinsey and Company

Although Americans of all ages use FinTech services, younger Americans are generally more likely to be FinTech users. Gen Z (ages, 9-24) and millennials (ages, 25-40) had the most FinTech accounts overall. Gen Z saw an increase of 14 percentage points of new users (a 27 percent increase) and millennials saw an increase of 8 percentage points (a 17 percent increase). A substantial number of Baby Boomers (ages, 57-75)—26 percent—rely on some sort of FinTech account, contradicting the general perception that digital tools are exclusively for younger people.[475]

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[475] Krivkovich, A., O. White, Z. Townsend, J Euart (2020). "How US customers' attitudes to FinTech are shifting during the pandemic." McKinsey & Company. https://www.mckinsey.com/industries/financial-services/our-insights/how-us-customers-attitudes-to-fintech-are-shifting-during-the-pandemic

7.13.3 FinTech Regulatory Framework

7.13.3.1 Key Regulatory Actors

FinTech businesses in the United States are not subject to a FinTech-specific regulatory framework by any single federal or state regulator. Rather, depending on the activities of a FinTech company, that FinTech company may be subject to a myriad of federal and state licensing or registration requirements, and, thereby, also subject to laws and regulations at both the federal and state levels. At the federal level, the Consumer Financial Protection Bureau (CFPB) has jurisdiction over providers of financial services to consumers.

Table 48: Key Regulatory Actors in USA

Regulator	Details
Consumer Financial Protection Bureau (CFPB)	Has jurisdiction over providers of financial services to consumers. Because many FinTech businesses are aimed at providing services predominantly to individual consumers, the CFPB can enforce a range of consumer protection laws (such as consumer lending laws and anti-discrimination laws) that apply to the activities of such companies. The CFPB also has authority to enforce legal action against the use of unfair and deceptive acts and practices generally.[476]
Securities and Exchange Commission	Independent federal commission that regulates American companies and capital markets. Requires publicly traded funds and companies to disclose financial information. Also oversees capital markets, securities sales, and public offerings. [477]
Office of the Comptroller of Currency (OCC)	The primary federal bank regulator for member economy government banks. Announced in July 2018 that it would begin accepting special purpose member economy government bank charter applications from FinTech companies that receive deposits, paychecks, or lend money. [478]
State Governments and Regulators	Each state government has its own regulatory oversight of the banking sector and banking laws within their state. In areas where there is conflict, state regulators will defer to federal regulators, and state and federal agencies will sometimes work together to investigate financial crimes. However, there remain some differences in banking between states, and states will sometimes prosecute financial crimes in their state without the help of federal agencies. [479]

[476] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/usa
[477] SEC (2020). https://www.sec.gov/about/what-we-do
[478] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/usa
[479] ICLG https://iclg.com/practice-areas/FinTech-laws-and-regulations/usa

7.13.3.2 Regulations Related to FinTech Services

FinTechs in the United States do not experience regulations specific to the FinTech sector itself, but they are subject to regulations depending on the service they provide, the states in which they do business, and how they collect and use customer data. For instance, a company providing robo-advising services to consumers may be subject to regulation by the SEC as a provider of investment services, by the CFPB as a provider of services to consumers, by the Department of the Treasury's Financial Crimes Enforcement Network to prevent money laundering and funding of terrorism, and by state regulations in any state where they do business.[480] In interviews, stakeholders ranked business licensing, data collection rules, and regulations around specific products and services as their top three regulatory concerns. Stakeholders also mentioned concerns around preventing money laundering or preventing people from funding terrorist activities using FinTech platforms.

Although the US has a body of cybersecurity laws, these do not deal specifically with FinTech. The Computer Fraud and Abuse Act is the primary law under which cybercrimes are prosecuted, and it covers areas including hacking, sale of passwords, and cyber-extortion. The Electronic Communications Protection Act protects communications coming from providers of electronic communication services, which may include FinTech service providers. Finally, the Cybersecurity Information Sharing Act allows companies to monitor their own network traffic and to share cyber-threat information with the government and with other companies.[481]

7.13.4 FinTech & SMEs

7.13.4.1 The SME Sector in the USA

SMEs are the backbone of the American economy. The United States' roughly 30 million SMEs form 99 percent of all American companies[482] and account for nearly two-thirds of net new private sector jobs in recent decades.[483] According to the Small Business Administration, small companies create 1.5 million jobs annually and account for 64 percent of new jobs created in the U.S.[484] Small businesses are particularly important to local economies, as USD 48 of every USD 100 spent at small businesses stays within the community where the business operates, as opposed to just USD 14 for member economy government businesses. Support for small businesses is particularly important, as most businesses start small and 20 percent of all businesses close within a year, even before the COVID-19 pandemic. Additionally,

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[480] Ibid.

[481] Ibid

[482] Palladino, L (2018). Small Business FinTech Lending: The Need for Comprehensive Regulation. *Fordham Journal of Corporate and Financial Law.* 24(1), 77-103. https://ir.lawnet.fordham.edu/jcfl/vol24/iss1/3/

[483] Office of the United States Trade Representative

[484] Serrano, A. (2020). "How Many Jobs Do Small Businesses Really Create?" https://www.fundera.com/blog/small-businesses-job-creation

although the pandemic forced a wave of business closures, it also brought a wave of new businesses, with 4.3 million new business applications in 2020, a 24 percent increase from the previous year.[485]

SME financing needs are as broad as the SME sector itself, including payment and ecommerce, money transfers, funding, accounting, and customer engagement. In 2019, 44 percent of small businesses said credit availability was a challenge they experienced, and 60 percent of small business credit applicants said they received less credit than they applied for[486]. Needs exist for small businesses in terms of access to formal credit, streamlining the credit application process, and providing access to peer investors or other benefactors.[487] Additionally, more retail consumers prefer to pay with cards or wallets, and the ecommerce sector is growing as well.[488] Small businesses can also make use of software packages to help with the accounting, payroll, and administrative needs of their businesses, some of which even integrate payment platforms or other services.[489] Finally, many small businesses engage with customers through business accounts or targeted ads on social media, or through social channels on crowdfunding platforms.

7.13.4.2 FinTech-Based Financial Inclusion of SMEs

Because of the maturity of the FinTech sector in the United States, American SMEs have access to a wide variety of FinTech services, from credit to accounting, payments and cybersecurity. SME owners can use online lenders to get loans approved much faster than through traditional lenders using simple automated application processes. Accounting software programs make it possible for SME owners to handle invoicing, payroll, expenses, and even forecasting. Payment solutions also exist, which include e-wallets, digital payments, and even full e-commerce platforms.[490] SMEs can also take advantage of FinTech platforms to manage cybersecurity risk, speed transfer and payment times, and increase transaction transparency. [491]

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485 Sheehy, K (2021). "Small Business Statistics: By the Numbers as of 2021." Nerdwallet. https://www.nerdwallet.com/article/small-business/small-business-statistics

486 University of Pennsylvania Wharton School, (2019). https://online.wharton.upenn.edu/uncategorized/FinTech-is-helping-small-business/

487 Palladino, L (2018). Small Business FinTech Lending: The Need for Comprehensive Regulation. *Fordham Journal of Corporate and Financial Law.* 24(1), 77-103. https://ir.lawnet.fordham.edu/jcfl/vol24/iss1/3/

488 University of Pennsylvania Wharton School, (2019). https://online.wharton.upenn.edu/uncategorized/FinTech-is-helping-small-business/

489 Freedman, R (2021). "Best Accounting Software for Small Business." Investopedia. https://www.investopedia.com/best-accounting-software-for-small-business-5069679

490 Datafloq (2021). https://datafloq.com/read/4-ways-FinTech-helps-improve-small-business-operations/12014

491 Forbes (2021). https://www.forbes.com/FinTech/2021/#7066350b31a6

7.13.4.3 Regulations Affecting the SME Sector and FinTech Services

Most FinTech regulation in the United States focuses on protecting consumers, so provision of FinTech services to SMEs is relatively unregulated. In the past, much small business lending was conducted through community banks, but more small business lending has moved to FinTechs as the FinTech sector in the United States has grown. FinTechs are considered nonbank lenders, and so they do not fall under regulatory frameworks for banks. While FinTechs' consumer lending practices are regulated by consumer protection laws, the same is not true of nonbank small business lending, leaving FinTech lending to SMEs in a regulatory gray area. [492]

Certain areas of FinTech regulation, however, are more pertinent to small business needs. One example of this is crowdfunding and P2P lending, which is used by both individuals and small businesses to raise capital. In 2012, the Jumpstart Our Business Startups (JOBS) Act introduced new regulatory frameworks governing crowdfunding and P2P lending. The new rules under this act included placing crowdfunding portals (treated as a new type of online intermediary) under the auspices of the SEC and the Financial Industry Regulatory Authority (FINRA), capping the amount companies can raise through crowdfunding at USD 1.07 million per year, and detailing the information crowdfunding companies must provide to investors[493].

7.13.5 Gender-based Impact of FinTech Financial Inclusion

Women in the United States suffer lower economic inclusion than men in general, and these do lead to some differences in their inclusion in FinTech as well. On average, American women earn 82 cents for every dollar earned by men, with even worse outcomes for women of color[494]. About 56 percent of people in poverty in the economy are women. Women in the US are also likely to have less wealth than men and to hold more debt[495]. Women-owned businesses made up only 19.9 percent of total number of in businesses in the United States in 2018. Although the number women-owned businesses is slowly growing, women-owned firms lag behind male-owned firms in terms of both payroll and earnings.[496] Participation in FinTech, on the other hand, is more equitable between women and men, although women are still less likely to hold an account at a financial institution, to have make or receive digital

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[492] Palladino, L (2018). Small Business FinTech Lending: The Need for Comprehensive Regulation. *Fordham Journal of Corporate and Financial Law.* 24(1), 77-103. https://ir.lawnet.fordham.edu/jcfl/vol24/iss1/3/

[493] M. Nonaka, C. Decresce, R.S. Hooper and J.S. Konko (2019). "FinTech in the United States: Overview." Thompson Reuters Practical Law. https://uk.practicallaw.thomsonreuters.com/w-017-4511?transitionType=Default&contextData=(sc.Default)&firstPage=true#co_anchor_a405423

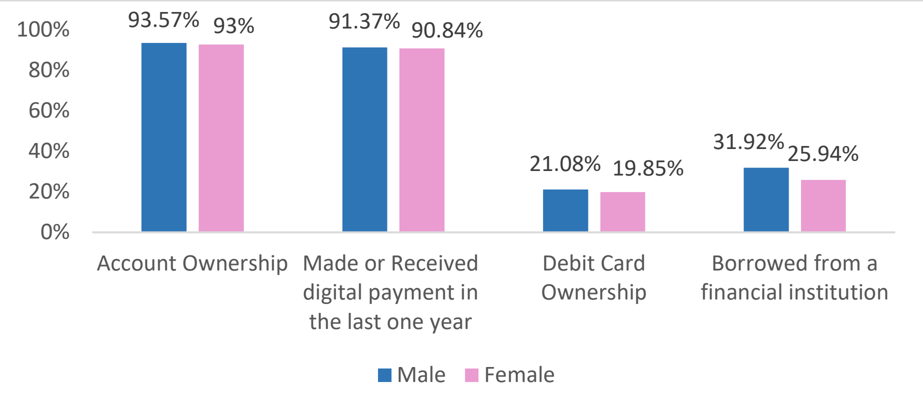
[494] The State of the Gender Pay Gap in 2021 - https://www.payscale.com/research-and-insights/gender-pay-gap/

[495] Center for American Progress (2020). https://www.americanprogress.org/issues/women/reports/2020/08/03/488536/basic facts-women-poverty/

[496] US Census (2021). https://www.census.gov/library/stories/2021/03/women-business-ownership-in-america-on-rise.html

payments, or to own a debit card. Most striking are differences in borrowing, with American women being 6 percent less likely to have borrowed from a financial institution than men[497].

Figure 59: Finance and FinTech Participation by Gender, 2017.



Source: Findex

7.13.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in the USA

Stakeholders interviewed cited the introduction of open banking and regulatory sandboxes to the US economy as practices that would help foster FinTech growth. FinTech regulatory sandboxes have been passed into state law in Arizona, Nevada, Utah, Wyoming, Florida, and West Virginia, with similar bills introduced in several more states[498]. However, the inability to cross state lines makes upscaling and coordination difficult, and a bill introduced for a federal regulatory sandbox in 2016 has yet to pass[499]. Although open banking does not yet exist in the United States, a 2021 executive order encouraged the CFPB to write guidelines to allow open banking[500].

Growth is also occurring in the areas of distributed ledger technology and blockchain in particular, especially where transparency is concerned. Most American consumers probably know blockchain best as the system underpinning cryptocurrencies like Bitcoin, but distributed ledger technology is gaining traction as a way to increase market and transaction transparency by recording transactions in shared ledgers. This principle forms the

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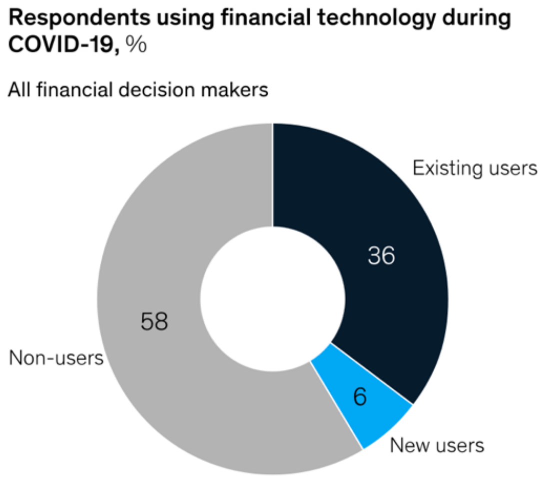
497 Findex (2017). https://globalfindex.worldbank.org/
498 Mississippi Center for Public Policy (2021). https://mspolicy.org/regulatory-sandbox-reforms-advance-across-the-nation/
499 The Regulatory Review (2021). https://www.theregreview.org/2021/08/19/rossi-martins-sandbox-for-us-financial-system/
500 Finextra (2021). https://www.finextra.com/the-long-read/234/why-bidens-executive-order-is-a-green-light-for-us-open-banking

underpinnings of FinTech products like PAX, a stable cryptocurrency that uses blockchain to increase transaction and market transparency[501].

7.13.7 The Impact of COVID-19

The COVID-19 pandemic saw growth across all American FinTech sectors, although growth varied by sector. More than 24 percent of consumers use a FinTech banking platform, making it the most used type of FinTech service. These general banking platforms also saw the greatest total absolute increase in users: 6 percent of total consumers opened an overall banking FinTech account during the crisis. Despite lagging in growth terms, payments accounts are the second-most-used financial technology type, with about 16 percent of consumers using at least one account. Investment and lending platforms have smaller numbers of total customers but have grown by the highest percentage during the COVID-19 crisis—with increases of 23 percent and 25 percent in users, respectively.[502]

Figure 60: Proportion of Respondents Using FinTech During COVID-19.



Source: McKinsey and Company

7.13.8 Emerging FinTech Companies in the USA

The financial sector is currently experiencing an upheaval in terms of employing new technologies to reach more consumers. There's a ton of long-term potential in the FinTech industry as the tools and applications of FinTech affect almost every person who wants to

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[501] Forbes (2021). https://www.forbes.com/FinTech/2021/#7066350b31a6

[502] Krivkovich, A., O. White, Z. Townsend, J Euart (2020). "How US customers' attitudes to FinTech are shifting during the pandemic." Mckinsey & Company. https://www.mckinsey.com/industries/financial-services/our-insights/how-us-customers-attitudes-to-fintech-are-shifting-during-the-pandemic

make financial transactions. With that in mind, here are five emerging FinTech companies in the United States that are worth keeping an eye out for in the near future.

Table 49: Emerging FinTech Companies in the USA

Name	Details
Arcus	Allows companies to **offer digital wallets and online payments to Latin American consumers**. Has 85 customers and USD 19 million in VC funding. [503]
Coalition	Packages **cybersecurity risk management tools** for small and medium businesses with up to USD 15 million in **cybersecurity insurance**. Raised USD 300 million in VC and was last valued at USD 1.8 billion. Has 42,000 customers and gross written premiums of USD 240 million. [504]
MaCoFi	Partners with local governments to provide **fee-free direct deposit, ATM withdrawals, and discounted city services**. Backed by Mastercard and Citi. Expects over 100,000 app users by the end of 2021. [505]
Orum	Speeds up bank and FinTech fund transfers by using machine learning to assess risk of transactions. Has cut transfer time by 80 percent. Has USD 29 million in VC funding and 15 major customers. [506]
Paxos	**Blockchain infrastructure** firm seeking to introduce more **transparency** into markets. Runs a stablecoin, PAX, intended to make transactions easier to audit. PAX is valued at USD 1.3 billion. Also runs a currency exchange called itBit. [507]

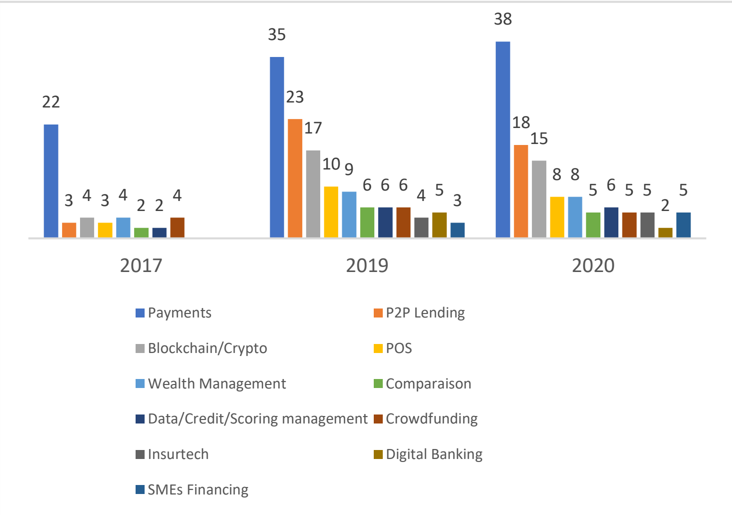
[503] Ibid.
[504] Ibid.
[505] Ibid.
[506] Ibid
[507] Krivkovich, A., O. White, Z. Townsend, J Euart (2020). "How US customers' attitudes to FinTech are shifting during the pandemic." Mckinsey & Company. https://www.mckinsey.com/industries/financial-services/our-insights/how-us-customers-attitudes-to-fintech-are-shifting-during-the-pandemic

7.14 Viet Nam

7.14.1 DFS Context and Trends

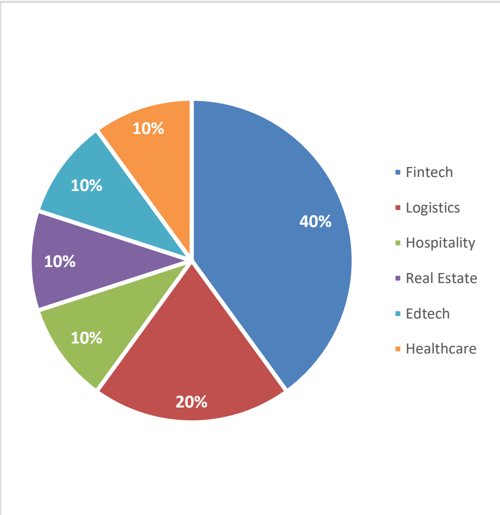
Since 2015, the Vietnamese FinTech sector has been growing rapidly in the economy; however, the number of companies decreased during the pandemic. From 2015 to 2019, the number of FinTech enterprises grew by almost 218 percent from 39 businesses to 124 businesses. In addition, the emergence of a sector specialized in SME financing while still at its youth could be a great opportunity for SMEs. In the first quarter of 2021, 40 percent of investment deals in startups was in FinTech compared to 20 percent in logistics and 10 percent in hospitality. This trend has been steady during the 2020 and 2019 respectively when the share of investment deals in FinTech startup was 37 percent and 41 percent, respectively [508]. However, after the pandemic the number of companies decreased to 115 in total, and some companies in P2P Payments and Blockchain/cryptocurrencies were closed down.

Figure 61: Evolution Over the Number of FinTech Companies by Sector



Source: VIET NAM FINTECH REPORT 2020, FinTech Singapore

Figure 62: Investment Deals in Q1 2021 by Sector



Source: Q1.2021 VIET NAM STARTUP REPORT

However, the FinTech sector faces connectivity and financial literacy challenges. The financial literacy of the population is low at 24 percent, which possibly hinders the adoption of FinTech solutions[509]. The share of population that has a bank account is low at 30.8 percent,

[508] Scribd. (2021.). *2021 Viet Nam Startup Report (Nexttrans)*. Scribd. Retrieved November 2, 2021, from https://www.scribd.com/document/532080979/2021-Viet Nam-Startup-Report-Nexttrans.

[509] S&P Global FinLit Survey, 2016

debit card ownership is at 26.74 percent and 69 percent of the population has savings[510]. The smartphone penetration in the economy is around 45 percent and the internet penetration is 70 percent[511]. While the smartphone and internet penetration are not poor, the issue with existing low levels of financial literacy has limited the growth of FinTech in the economy.

7.14.2 The FinTech Ecosystem in Viet Nam

7.14.2.1 Main Actors in the FinTech Ecosystem

There are 5 main actors in the FinTech ecosystem in Chile: i) FinTech Firms; ii) FinTech Collaborators; iii) regulators; iv) Financiers and v) end-consumer of FinTech solution. The first is the FinTech firms themselves that offer the different FinTech solutions in the market such as Tima and Eloan. FinTech collaborators may be traditional financial institutions or large technology companies who are looking to incorporate FinTech services into their operations or promote these services. This may be done through collaborations with existing FinTech, mergers and acquisitions with existing FinTech firms, or developing in-house FinTech departments from scratch. For example, FinTech Singapore providing reports, data and news on FinTech in ASEAN. Third are the regulatory authorities that oversee the activities of firms operating in the finance and technology space, as the state Bank of Viet Nam. The fourth actor group is the financiers that invest in the growth of FinTech firms. This includes venture capitalists, angel investors, as well as financial support programs from the government, which includes Warburg Pincus, a private equity firm that raised USD 100 million for the Payment FinTech called MOMO[512]. The final actor is the end consumer of FinTech services, which could be individuals, SMEs, large enterprises, governments, or non-profit organizations such as consumers taking advantage of innovative payment solutions such as e-wallets and Apple pay.

7.14.2.2 FinTech Usage

With low connectivity and financial literacy, the adoption and awareness of FinTech solutions is low in Viet Nam. A survey of more than 1,000 households was conducted to enquire on their financial literacy and FinTech Usage[513]. It was found that that around 46 percent of the sample is aware of digital borrowing, 36 percent of digital lending and 40 percent of digital money. Only 9.5 percent of the sample use their smartphone to manage their financial portfolio and only 10 percent engage in payments/transfer via mobile banking

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[510] *2020 Viet Nam fintech report - fintechnews.sg*. (n.d.). Retrieved November 2, 2021, from https://fintechnews.sg/wp-content/uploads/2021/01/Viet Nam-Fintech-Report-2020.pdf.

[511] Kemp, S. (2021, October 22). *Digital in Viet Nam: All the statistics you need in 2021 - DataReportal – global digital insights*. DataReportal. Retrieved November 2, 2021, from https://datareportal.com/reports/digital-2021-Viet Nam.

[512] *2020 Viet Nam fintech report - fintechnews.sg*. (n.d.). Retrieved November 2, 2021, from https://fintechnews.sg/wp-content/uploads/2021/01/Viet Nam-Fintech-Report-2020.pdf.

[513] Morgan, P. J., & Trinh, L. Q. (2020). FinTech and Financial Literacy in Viet Nam.

apps. Finally, the data suggested that the adoption rate of FinTech services among males is around 18 percent and females around 15 percent.

7.14.3 FinTech Regulatory Framework

7.14.3.1 Key Regulatory Actors[514]

The FinTech sector in Viet Nam has multiple regulators but is mainly directed by the Prime Minister without any clear and hard legal instruments. While there are different regulatory actors that are involved in the Vietnamese regulatory framework, FinTech firms are regulated by various regulatory bodies depending on the services they provide. The table below outlines the key regulatory actors and their responsibilities:

Table 50: Key Regulatory Actors in Viet Nam

Regulator	Role
Prime Minister	Provides general directions and principles, and without any clear and hard legal instruments
The Ministry of Information and Communication	The focal point for research and development of the FinTech standard. It helps grant a Certificate of technical eligibility to operate and store information of FinTech; and comment on the application for a pilot license for FinTech operation related to technical standards.
State Bank of Viet Nam (SBV)	In charge of coordinating research, building a licensing mechanism, monitoring and management of FinTech business activities, and receiving the document application pilot for FinTech business operation. The SBV will also handle problems arising in the implementation and technical review of the operation mechanism to grant licensing documents
The Ministry of Planning and Investment	Studying and building conditions on charter capital and ownership structure conditions for companies operating a FinTech business.
The Ministry of Science and Technology	Comments on the application documents for FinTech relating to technical standards and co-ordinates with the Ministry of Information and Communication to research and develop a set of technical standards and review the operating mechanism of the FinTech models proposed by enterprises to issue a Certificate of Technology Eligibility and Technology Solutions.
The Ministry of Public Security, the Ministry of Finance, and the Ministry of Industry and Trade	The ministry's obligations are to co-ordinate with the SBV to consider and give opinions on the application file for a pilot license for FinTech operations.

[514] Source: Chambers and Partners, FinTech 2021, https://practiceguides.chambers.com/practice-guides/fintech-2021/VietNam

7.14.3.2 Regulations Related to FinTech Services[515]

The FinTech legal framework in Viet Nam is still in its nascent stages, with solely specific regulations in e-wallet and payment intermediary services. The sectors with clear regulations/guidelines in the ecosystem are below:

Table 51: Regulations Related to FinTech Services in Viet Nam

Key Area of Regulation	Regulation Name	Details
Payment services and EKYC	Decree No 87/2019/ND-CP	Provide guidelines for the implementation of e-KYC as a FinTech solution. It now allows the bank to decide whether or not to meet with customers for the first time when performing transactions related to new technology.
Mobile Money	Decision 316/QD-TTg	Allows the use of mobile phone credit to pay for small-value goods and services. To be eligible to participate in the pilot, businesses need to have (i) licenses to provide intermediary e-wallet payment services, or (ii) licenses to establish a public mobile terrestrial telecommunications network using radio frequencies or have subsidiaries with permission from the parent company to use telecommunications, network and data infrastructure.
P2P Lending	General laws such as the Civil Code, the Law on Investment and the Law on Enterprise	FinTech companies operating P2P lending or blockchain platforms are obliged to comply with the regulations of general laws such as the Civil Code, the Law on Investment and the Law on Enterprise (including registration, interest rates).
Sandbox Mechanism	Decision No 999 / QD-TTg dated 12 August 2019	The regulation essentially enables limited-time testing of novel platform-provisioning activities and respects the novelty and creativity of the technology business. According to the new Draft Decree providing for a controlled testing mechanism (sandbox) for FinTech activities in the banking sector in 2020, P2P lending is part of a two-year pilot for FinTech regulatory sandbox activity.
Electronic transactions	Law on electronic transactions	The greatest implications of the law are regarding the recognition of e-contracts and regulation of e-signatures which are FinTech solutions.
Data protection and cybersecurity	Law on Cyberinformation Security 2015	Subject to a plethora of duties in relation to their collection, storage, and usage of data, including requirements to collect information only when consented to by the data subject, use data collected only

[515] Ibid

		within the scope of consent, and have the duty to have adequate systems in place to protect the collected data.

7.14.4 FinTech & SMEs

7.14.4.1 The SME Sector in Viet Nam

Micro and small firms dominate the market in Viet Nam. In 2018**,** SMEs represented around 47.7 percent of all enterprises while micro enterprises dominate the market at 50.9 percent. Small enterprises represent around 50.9 percent of all enterprises and large enterprises around 1.4 percent. The top 1 percent largest companies employ more than half of the total workforce in Viet Nam (51 percent), while the top 10 percent accounts for 83 percent of total employment.[516] Among the 100 largest firms 91 are found in the manufacturing industry, which indicates the extent to which large manufacturing companies are at the core of the Vietnamese economy[517].

Figure 63: MSME and Large Enterprise Sector in Viet Nam

Firm Size	Number of firms	Percent Age
Micro (less than 5 employees)	340462	50.9 percent
Small (between 5 and 49 employees)	295329	44.2 percent
Medium (between 50 to 199 employees)	23144	3.5 percent
Large (more than 200 employees)	9568	1.4 percent

Source: General Statistics of Viet Nam, 31st December 2018

SMEs in Viet Nam have challenges in accessing finance relying mostly on the government for lending. The major source of financing for SMEs are state-owned banks, with these banks accounting for nearly 50 percent of all loans to SMEs in Viet Nam.[518] The lending activities of banks to SMEs represents a low share of the total banking activity in the economy[519]. Access to credit is of concern for SMEs as banks have a strong preference towards lending their funds

[516] *SME and entrepreneurship policy in Viet Nam*. OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/industry-and-services/sme-and-entrepreneurship-policy-in-viet-nam_30c79519-en.
[517] Ibid
[518] Ibid
[519] Ibid

to large firms[520]. Higher default risks, lack of financial transparency, and lack of assets for a mortgage are the major factors why banks are less inclined towards lending to SMEs.[521]

7.14.4.2 FinTech-Based Financial Inclusion of SMEs

SMEs suffer from lack of access to finance, and FinTech solutions specialized in financing for SMEs (e.g., P2P lending platforms) seem to offer a new alternative. Alternative financing sources, including P2P lending platforms, are attracting a great number of SME borrowers even at the pilot stage of the regulation[522]. FinTech firms are offering funds from investors to crowdfund SMEs. The Vietnamese P2P lending market is growing substantially, with its value at around USD 7.8 billion in 2020[523]. Such P2P lending Fintech companies include: Validus' marketplace lending aims to address the SME financing gap by providing better digital financing solutions to underserved SMEs in the region.

The FinTech sector in Viet Nam is diversified, with payments and remittances, P2P lending and Blockchain/cryptocurrencies being the main segments. Around 33 percent of FinTech companies are specialized in payments, followed by P2P Lending at 15.7 percent then 13 percent Blockchain/Crypto. The sectors of crowdfunding and digital banking are still growing, constituting respectively around 4.3 percent and 1.7 percent of the market. Finally, SME financing sector represents only 4.3 percent of all registered FinTech companies in Viet Nam[524].

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[520] *Viet Nam issues investment incentives for smes*. Viet Nam Briefing News. (2020, April 29). Retrieved November 1, 2021, from https://www.Viet Nam-briefing.com/news/Viet Nam-issues-investment-incentives-smes.html/.

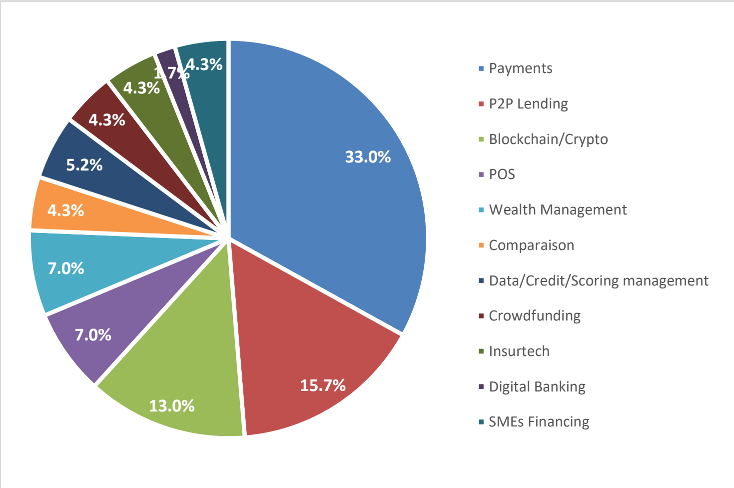
[521] Ibid

[522] *Fintech lending platforms to answer Viet Nam's SME Funding Crunch*. Unravel. (2020, October 8) Retrieved November 1, 2021, from https://unravel.ink/FinTech-lending-platforms-to-answer-Viet Nams-sme-funding-crunch/.

[523] Fintech startup Fvndit notches USD 30 million for its Viet Namese P2P lending firm - https://kr-asia.com/fintech-startup-fvndit-notches-usd-30-million-for-its-Viet Namese-p2p-lending-firm

[524] Viet Nam Fintech Report – Finctechnews.sg

Figure 64: Viet Nam's FinTech Sector in 2020



Source: FinTech Singapore 2020

7.14.4.3 Regulations Affecting the SME Sector and FinTech Services

The new Draft Decree providing for a controlled testing mechanism (sandbox) for FinTech activities in the banking sector in 2020 could attract more SMEs to FinTech lending services.[525] The P2P lending platforms are part of a two-year pilot for FinTech regulatory sandbox activity. It could attract a great number of SMEs searching for loans but lack traditional collateral. Banks are reluctant to lend to SMEs due to insufficient collateral, strict corporate customer screening criteria, and lack of financial literacy.[526] P2P Lending is an exciting alternative for SMEs for faster and more efficient loans.

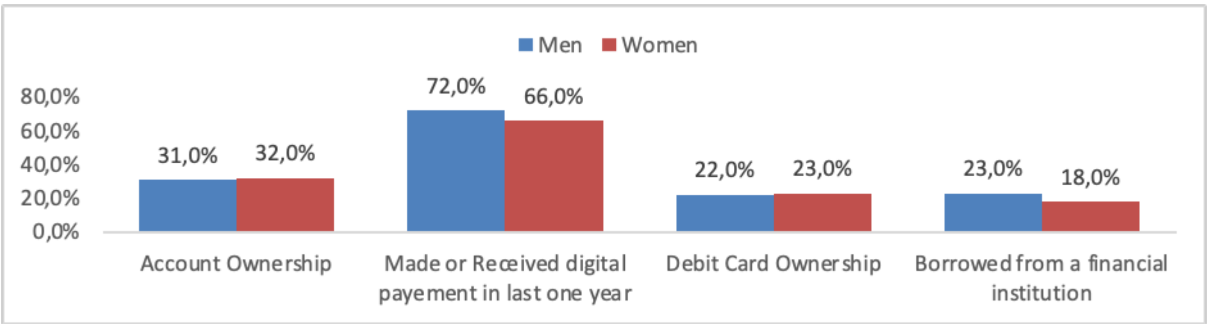
7.14.5 Gender-based Impact of FinTech Financial Inclusion

Men and women are not very involved in accessing and using financial services offered in the economy and there are no significant differences between both genders according to the Global Findex Database 2017. Around 31 percent of men and 32 percent of women over the age of 15 own an account in a financial institution. In addition, 72 percent of men and 66 percent of women have made or received a digital payment in the last year and around 22 percent of the population owns a debit card. Finally, the share of the Vietnamese population that borrows is slightly higher for men than women, with around 23 percent of men having borrowed from a financial institution in contrast to 18 percent of women.

[525] Source: Chambers and Partners, FinTech 2021, https://practiceguides.chambers.com/practice-guides/fintech-2021/Viet Nam

[526] *SME and entrepreneurship policy in Viet Nam*. OECD iLibrary. (n.d.). Retrieved November 2, 2021, from https://www.oecd-ilibrary.org/industry-and-services/sme-and-entrepreneurship-policy-in-viet-nam_30c79519-en.

Figure 65: Gender Split and Usage of Financial Services



Source: Global Findex Database, 2017

The difference in the participation of men and women in the labor force is small, but both have low scores in financial literacy. Around 73 percent of men participate in the labor force in contrast to 75 percent of women[527]. In addition, 27 percent of men in Viet Nam are financially literate compared to 21 percent of women. These scores are deemed low and limit accessibility of the population to financial services[528].

7.14.6 Common Practices and More Innovative or Emerging Approaches on FinTech Financial Inclusion in Viet Nam

There are private initiatives in the economy to introduce online payments or innovative solutions to offline shops. MoMo launched in 2013 and has become Viet Nam's biggest e-wallet. Being an early mover gave it time to cultivate relationships with tens of thousands of offline stores and connect them with the technology to transfer money between bank accounts. Today, it claims 60 percent of Viet Nam's mobile payments market, processing an annualized USD 14 billion worth of transactions for more than 25 million users, according to the company[529]. The company offers discounts for payments on everyday consumption items such as coffee, movie tickets and deliveries to attract consumers to their online payment applications[530]. This policy greatly increased MoMo's revenue base, especially during the pandemic[531].

527Source: World Bank

528 S&P Global FinLit Survey, 2016

529 Dashveenjit Kaur | 19 August 2021. (2021, September 7). *Could Viet Nam be the next fintech battleground of Southeast Asia?* -. Tech Wire Asia. Retrieved November 1, 2021, from https://techwireasia.com/2021/09/could-Viet Nam-be-the-next-FinTech-battleground-of-southeast-asia/.

530 *Viet Nam emerges as Southeast Asia's next fintech battleground*. KrASIA. (2021, August 6). Retrieved November 1, 2021, from https://kr-asia.com/Viet Nam-emerges-as-southeast-asias-next-FinTech-battleground.

531 Ibid

7.14.7 The Impact of COVID-19 on FinTech Services

The pandemic has accelerated the development of FinTech services in the economy, especially in digital payments and e-commerce. The economy witnessed increase in digital payments and e-commerce activity amid COVID-19 restrictions and fear of contagion. The pandemic raised the number of digital customers of e-wallets and banks. Wallet-based transactions have increased through P2P transfers, bill payments, and P2M payments for essential services owing to the lockdown and aversion to exchange cash[532]. MoMo reached 20 million users as of September 2020, which translates to nearly 100 percent growth in a year.[533] Alongside supermarkets and ecommerce sites, mobile wallets, such as MoMo, Grab, and ZaloPay started offering online shopping platforms as people had to stay at home during the lockdown. These e-wallet providers continue to offer these services as their customers have become familiar with online shopping[534].

7.14.8 Emerging FinTech Companies in Viet Nam

Viet Nam is currently home to more than 130 FinTech startups that cater to numerous clients and cover a broad range of services available for SMEs. With the Vietnamese government working on a number of regulatory guidelines, the upcoming years seem to be an exciting one for the FinTech field. Here are a few companies to keep a close eye on.

Table 52: Emerging FinTech Companies in Viet Nam

Name of Company	Services
Tima	P2P lending platform operating in Viet Nam founded in 2015. In addition, to the basic lending platform, it also provides mortgage loan services and financial advisory services.
DragonLend	DragonLend is an online platform that matches businesses with banks, financial institutions in Viet Nam. It aims to provide SMEs with essential financing that their businesses need to grow and thrive.
eLoan	an online P2B lending platform. Offers business loans up to VND10 billion for a period of 1 - 36 months, both secured and unsecured, with collateral in the form of real estate, vehicle, or equipment. It specializes in SME financing.

[532] MSC, "Impact of COVID-19 on FinTech, Country Viet Nam" https://www.microsave.net/wp-content/uploads/2021/06/Impact-of-COVID-19-on-FinTechs-Viet Nam.pdf
[533] Ibid
[534] Ibid

8 PROMISING AVENUES FOR AN EFFECTIVE SME FINTECH POLICY LANDSCAPE

Most APEC economies have implemented policies and initiatives to facilitate the development of the Fintech industry, albeit with varying degrees of success. Economies like Singapore and Hong Kong, China have made significant advances in this regard. For instance, in a bid to become the world's first *Smart Nation,* Singapore has been actively integrating technology into every aspect from government service delivery to the financial systems. Singapore also has one of the most comprehensive regulatory environments to guide FinTech. For instance, the Monetary Authority of Singapore (MAS) formed the FinTech & Innovation Group (FTIG), which is responsible for regulatory policies and development strategies for technology and innovation, to better manage risks, enhance efficiency and strengthen competitiveness in the financial sector.[535] Similarly, legislation has also been introduced in Mexico, like the 2018 Fintech Law and its subsequent secondary provisions to cover areas such as open banking standards, cryptocurrency, and the regulatory Sandbox. In this context, several other economies have established regulatory sandboxes to help FinTech firms test out new innovative products, while the regulators also learn about these innovations which help establish robust regulations.

Experience suggests that proportionality of regulation is important for improving access to finance for SMEs. Anti-money laundering (AML) policies and measures aimed at combating the financing of terrorism (CFT) often come with detailed "Know Your Customer" rules which prescribe the exchange of detailed information on all parties involved in a financial transaction. [536] This can create a particular challenge for MSMEs (and low-income groups) who often struggle to provide the required level of documentation to access financial services. The World Bank's Global Findex report indicates that strict documentation requirements hamper bank account ownership with 20 percent of adults without an account at a financial institution reported lacking the documentation needed to open one.[537] [538] Therefore, the regulations must be scaled in line with FinTech's target market, risk profile, and business model. One example of proportional regulation is Bank Indonesia, which has introduced a regulation to support digital financial services and agent banking, which covers AML/CFT policies.[539] The regulation states that a simplified know-your-customer process can be applied when the money laundering and terrorism financing risk is low and for opening

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535 https://www.mas.gov.sg/who-we-are/Organisation-Structure/Fintech-and-Innovation
536 https://www.bis.org/publ/bppdf/bispap117.pdf
537 Demirguc-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2013). The global Findex Database. Worldbank. org http://documents.worldbank.org/curated/en/187761468179367706/pdf/WPS7255.pdf.
538 Among APEC economies, higher shares cited this barrier in such economies as the Philippines (45 percent) and Kenya (30 percent).
539 https://www.afi-global.org/sites/default/files/publications/2018-09/AFI%20GSP_WG_case%20study_AW_digital.pdf

accounts associated with government programs that seek to improve welfare and alleviate poverty.[540]

Policies aimed to facilitate open banking create opportunities for Fintech innovation. Open banking creates a framework that helps foster collaboration between the FinTech companies and the traditional finance sector (especially the banking sector) to allow entry of diverse institutions into the finance sector, promoting a healthy, competitive environment for all providers, who can offer a multitude of financial products and services tailored to the different market segments, including SMEs and women borrowers. The EY Global Fintech Adoption Index of 2019 showed that 25% of SMEs have adopted fintech globally, due to the good range of functionality and ease of use.[541] In addition, open banking products can expand access to financial insights that help increase SMEs' chances to get approved for loans and accurately assess what they can afford. Further, open banking significantly reduces transaction costs of lending as it allows lenders to cut out manual verifications, reduce costs, and offer an instant credit decision with fewer human errors. With these innovations, lenders can save approximately 18,000 work hours annually according to research by Yolt Technology Services (YTS).[542]

Enhanced cybersecurity and protection of digital privacy are essential. A recent BIS survey (May 2021) indicates that US households trust traditional banking institutions more than FinTech to protect their data.[543] Therefore, it is of critical importance that all FinTech consumers, including SMEs, be protected from potential frauds and are treated fairly by the FinTech firms. Especially, as FinTech firms are currently at the emerging stage, it is essential that they securely manage their customers' data and finances to gain confidence and increase their market share. The World Bank's Good Practices for Financial Consumer Protection provides a comprehensive list of good practices for all types of financial services, which includes the need for robust legal and supervisory frameworks, clear disclosure and transparency in terms and conditions, fair treatment and business conduct, data protection and privacy frameworks, and effective dispute resolution mechanisms.[544] The economies and policy makers looking to expand the FinTech sector should adhere to such principles to ensure privacy and protection for the consumers.

Improvement in digital financial literacy is equally critical. Demand for Fintech products and services could be increased if the potential consumers, especially the underserved like SMEs

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[540] Ibid.
[541] https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf
[542] https://fintechmagazine.com/financial-services-finserv/yts-open-banking-could-save-sme-lenders-18000-hours-year
[543] https://www.notarize.com/blog/digital-trust-and-safety-on-fintech-platform-lc
[544] https://openknowledge.worldbank.org/bitstream/handle/10986/28996/122011-PUBLIC-GoodPractices-WebFinal.pdf?sequence=5&isAllowed=y

and women are aware of the products and services available via FinTech and know how they can be benefitted from using these services. Evidence suggests that digital financial literacy increases the likelihood of using digital financial products and services to improve financial access.[545] This study suggests that SME usage of FinTech services is mostly limited to payment processing and lending, but there are other useful financial products (e.g., insurance, RegTech) that the SMEs can use and benefit from if they are aware of them. In addition, initiatives like mentorship programs or information dissemination campaigns, supporting gender focused FinTechs, could help promote FinTech services available to women and women-owned SMEs.

Building a strong information and communications technology (ICT) infrastructure is another important policy area. Adequate ICT infrastructure is a prerequisite to the development of the FinTech sector. Having the appropriate infrastructure would help grow the FinTech customer base beyond the existing areas of availability of such infrastructure. For example, at present almost all FinTech firms are located in urban areas of the world, and most of their customers are also urban, which is primarily due to the availability of ICT infrastructure in the urban areas. FinTech can however play a significant role in providing financial access to rural populations and other underserved groups. Kenya is a well-known example, where FinTech start-ups like M-Pesa have played a key role in bringing financial services to the rural population, which have helped increase rural household incomes by up to 30%.[546] Similarly, other initiatives like the Digital Village in Indonesia have helped promote digital technology in the rural financial ecosystem, such as the digitalization of village payment transactions.

Last but not least, it is important to promote regular policy dialogue between FinTech regulators and FinTech companies. Such dialogue helps the regulator obtains market insight so that they are able to make better informed policy decisions. On the other hand, FinTech companies are able to receive regulatory guidance[547] and are able to make more informed decisions regarding product development. Greater awareness of FinTech and private sector collaboration could be achieved by promoting events like FinTech festivals, where FinTech companies from all over the world gather to showcase and share the newest development in fields like API, Big Data, Blockchain, Machine Learning, RegTech, and Tech Risk.

[545] Hasan, M. M., Yajuan, L., & Mahmud, A. (2020). Regional development of China's inclusive finance through financial technology. SAGE Open, 10(1), 2158244019901252.

[546] https://knowledge.wharton.upenn.edu/article/can-fintech-make-the-world-more-inclusive/

[547] Guidance is supplemental material published by an agency that helps clarify existing rules. These include interagency statements, advisories, bulletins, policy statements, questions and answers and frequently asked questions.

ANNEXES

ANNEX 1: SUMMARY OF APEC ECONOMIES AND NON-MEMBERS CORE FINTECH ACTIVITIES

Table 53: Economies Level Analysis of Core FinTech Activities

Core FinTech Activities	Description	Australia	Canada	Chile	Colombia	Hong-Kong, China	Indonesia	Kenya	Malaysia	Mexico	Philippines	Singapore	Thailand	USA	Viet Nam
Digital Banking	Part of the broader context for the move to online banking, where banking services are delivered over the internet.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
MSME Lending	The provision of credit facilitated by technology that improves the customer-lender interaction or lenders' screening and monitoring of borrowers.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Crowdfunding	Platforms that allow a collection of individuals to provide monetary contributions for projects or companies provisioned in the form of equity	X	NI	X	X	X	X	NI	X	NI	X	NI	X	X	X
Robo-advice	Digital platforms that provide automated, algorithmic investment services with minimal human supervision.	NI	NI	NI	X	X	X	NI	X	X	NI	X	NI	X	NI
e-money	Licensing regime that lets non-banks deliver payments and financial services — without the need to acquire full-blown banking licenses.	X	X	X	X	X	X	X	X	X	X	X	X	X	X
InsurTech	Refers to the use of technology innovations designed to squeeze out savings and efficiency from the current insurance industry model.	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Cryptoassets	Digital representation of value that is neither issued by a central bank or a public authority but is accepted by a growing number of natural or legal persons as a means of payment and can be transferred, stored or traded electronically. e.g., crypto currency	X	X	NI	NI	X	X	X	X	X	X	X	X	X	X

Core FinTech Activities	Description	Australia	Canada	Chile	Colombia	Hong-Kong, China	Indonesia	Kenya	Malaysia	Mexico	Philippines	Singapore	Thailand	USA	Viet Nam
Enabling Technologies															
API	Technological means by which FinTech and financial services communicate with each other. Facilitate secure access to payment accounts and bank accounts	X[548]	X	X	NI	X	NI	NI	X	X	X	X	NI	NI	NI
Cloud	Allows FinTech companies to store, manage and access huge volumes of data securely, cost-effectively and autonomously, from anywhere and at any time.	X	NI	NI	X	X	X	NI	X	X	X	NI	NI	NI	NI
Biometric	Use of technology to identify a person based on some aspect of their biology. E.g., mobile device authentication and authorization	NI	NI	NI	X	X	NI	NI	X	X	X	NI	NI	NI	NI
DLT	Protocol that enables the secure functioning of a decentralized digital database. Distributed networks eliminate the need for a central authority to keep a check against manipulation.	X	X	X	TBI	X	X	NI	X	X	X	X	X	X	X
AI (Artificial Intelligence) & ML (Machine Learning)	AI is a critical part of the FinTech space in terms of collecting data, analyzing information, safeguarding and facilitating transactions, creating customer-centric products, and streamlining processes.	NI	X	NI	X	X	X	NI	X	X	NI	X	NI	NI	X

Core FinTech Activities	Description	Australia	Canada	Chile	Colombia	Hong-Kong, China	Indonesia	Kenya	Malaysia	Mexico	Philippines	Singapore	Thailand	USA	Viet Nam
Policy Enablers															
Digital ID	Digital identity refers to the acceptable and trusted digital format of a person or company's identity. Digital identity verification is becoming increasingly crucial for the onboarding of customers at banks, Telco, retailers/ e-tailers, and insurance companies	NI	NI	NI	NI	X	NI	NI	X	NI	NI	NI	NI	NI	NI
Open banking	Banking practice that provides third-party financial service providers open access to consumer banking, transaction, and other financial data from banks and non-bank financial institutions through the use of APIs.	X	NI	TBI	X	X	TBI	NI	TBI	NI	X	NI	NI	Ni	NI
Data protection	Set of strategies and processes that can be used to secure the privacy, availability, and integrity of someone's data.	X	X	X	X	X	TBI	X	X	X	X	X	X	X	X
Cyber security	Comprises directives that safeguard information technology and computer systems with the purpose of forcing companies and organizations to protect their systems and information from	X	X	TBI	X	X	TBI	X	X	X	X	X	X	X	X

[548] **X:** Existent **TBI**: To Be Implemented **NI:** Not Implemented

	cyberattacks, unauthorized access and control system attacks														
Innovation Facilitators	Initiatives that enable FinTechs to bring innovation to the market. Financial authorities identify two major types of innovation facilitators as organizational structures: innovation hubs (centers) and sandboxes (development and testing spaces).	**X**	**X**	**TBI**	**X**	**X**	**X**	**X**	**X**		**X**	**X**	**X**	**X**	**X**

ANNEX 2: DATA COLLECTION KEY INFORMANT INTERVIEW GUIDES AND QUESTIONNAIRES

1. POLICYMAKERS

Thank you for taking the time to meet/speak with us. Before we start the interview, we would like to give you an overview of our company, A2F Consulting. We are supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

These are the topics we would like to cover with you:

- Learn from your perspective on the FinTech ecosystem in your economy.
- Understand the regulatory challenges faced by FinTech.
- Learn how your entity interacts with other actors from the FinTech ecosystem.
- Learn about the potential of FinTech for SMEs and private individuals.

The interview will take approximately 45 mins. Your individual remarks will remain confidential. We will take notes during the interview for reference purposes. Is that ok?

Do you have any questions before we start?

Information on the interviewee, and his/her organization

Section objective: To learn more about the entity and its business.

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Name of Institution:

FinTech Landscape

Section objective: Get an overview of the landscape of FinTech.

1. What is your perspective of the FinTech landscape in the economy?
    a. What are the main advantages of Fintechs and the usage of their services?
    b. What are the disadvantages?
    c. Do you see Fintechs as an opportunity in your economy?
    d. Which type of FinTech companies do you think are a threat to traditional financial institutions?

2. What has been the evolution of Fintechs in the economy in the last 5 years? (Hint: How has the pandemic affected or benefited the FinTech industry?)
    a. How do you see the future of the FinTech industry in the economy?

3. In your opinion, which FinTech ecosystems in the world are more developed?
    a. In your opinion, do you think that the public sector has played an important role in the development of these ecosystems?

4. Do you think Financial Institutions face any of the following barriers when implementing FinTech services?
    a. Hard licensing of financial services
    b. Strict and high capital requirements
    c. No tax incentives
    d. Regulatory uncertainty
    e. Other:

5. Which of these issues would you think are important constrains for FinTech start-ups' survival in your economy? (Select all that apply)
    a. Hard licensing of financial services
    b. Strict and high capital requirements
    c. No tax incentives
    d. Regulatory uncertainty
    e. Other:
6. Who are the main consumers of FinTech services?

FinTech Regulation

Section objective: Get information on the FinTech regulation landscape in the economy.

7. Has the evolution of Fintechs created regulatory challenges? If so, what are the major challenges identified?
    a. How do new products and services raise new risks for financial stability, market confidence, societal objectives? (Hint: such as the reduction of money laundering and financial crime, and consumers of financial services, which require regulatory or supervisory action)
    b. What regulations have been implemented in terms of cybersecurity-related to the use of FinTech?

c. What are the regulations implemented for the protection of FinTech users' data?

8. Are new FinTech services in line with the economy's current regulations? (Hint: Which regulations need to be reformed?)

9. What do you think are the best practices implemented in terms of FinTech regulation?

10. Is there a specific law/regulation to promote FinTech growth?

11. Are there specific policies in place which aim to promote Fintechs in your economy?

12. Is there any policy focus on Fintechs targeting SMEs?
    a. Have there been any challenges in the implementation of these policies?
    b. How do you measure success in these policies?

13. Which differences in regulation do you see between FinTech and traditional financial institutions?
    a. Are new FinTech services regulated in terms of taking deposits?

Consumer Protection

Section objective: Get information on the regulation on consumer protection for FinTech services.

14. Which challenges do you see in the upcoming years related to consumer protection?
    a. What actions have you taken to mitigate these challenges?
    b. How successful have they been?

15. How are you enforcing consumer protection?

    a. Do authorities have in place appropriate supervision and market monitoring measures to hold FinTech providers accountable for consumer protection outcomes?

SME Sector Development (Answer if applicable)

Section objective: Get information on how regulators can influence SMEs to have access to FinTech.

16. How can the public sector use FinTech to facilitate access to finance and provide financial solutions for SMEs?

17. What role does your organization play in supporting SMEs with FinTech activities?
    a. And women owned SMEs?

18. What have been the success stories in your activities?
    a. What challenges have you faced?

19. What steps have you taken to mitigate these challenges?
    a. How successful have they been?

20. What are the main constraints identified by SMEs to use your support?

21. What is the potential of FinTech for the SME landscape?
    a. Which segment has the greatest potential for adoption and problem resolution?

22. How can FinTech solutions be more accessible to SMEs?
    a. How can regulators help with that?

Information Request

Section objective: Ask for sources from where we can analyze data on FinTech and investment.

23. What is the source of public information on Fintechs, such as the current number of active startups, age, size, revenue, profits, as well as the evolution of investments (from public and private sector) in Fintechs?

Thank you very much for your time.

2. INSTITUTIONAL STAKEHOLDERS

Introduction

Thank you for taking the time to meet/speak with us. Before we start the interview, we would like to give you an overview of our company, A2F Consulting. We are supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

These are the topics we would like to cover with you:

- Understand the challenges in relation to FinTech growth and investment.
- Learn how your entity interacts with other actors from the FinTech ecosystem. (Regulators, MNOs, FinTech Companies, etc.)
- Learn about the potential of FinTech based financial services for SMEs
- Understand how FinTech companies are performing in your economy

The interview will take approximately 45 mins. Your individual remarks will remain confidential. We will take notes during the interview for reference purposes. Is that ok?

Do you have any questions before we start?

Information on the interviewee, and his/her organization

Section objective: To learn more about the entity and its business.

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Name of the Institution:

Information on the interaction with Fintechs

Section objective: To learn more about the entity's interaction with the FinTech industry.

1. Which of the following descriptions best applies to your company?
   a. Incubator
   b. Accelerator
   c. Co-working Hub
   d. Business Association
   e. Other (please specify)

2. How would you describe your organization's interaction with Fintechs?

3. Has your company worked with FinTech companies?

4. How many FinTech companies are you working with right now?

5. What is (roughly) the share of FinTech companies compared to the total number of start-ups that you are currently working with?

6. Do you have information on the FinTech start-up survival rate? What do you think is the rate?

FinTech Landscape

Section objective: Get an overview of the FinTech landscape and working experience.

7. What is your perspective on the current situation of the FinTech industry in the economy?
    a. Can you describe the advantages you have identified?
    b. Can you describe the challenges you have identified?
    c. Do you see FinTech as an opportunity? Why?

8. How has the FinTech ecosystem evolved in the economy over the course of the last 5 years?

9. Do you think that the evolution of Fintechs has created regulatory challenges? If so, what are the major regulatory challenges identified?

10. Which, according to you, are the biggest challenges that FinTech companies are facing?

11. What do you think are some of the reasons why some FinTech start-ups have failed in the last 3 years?

12. What has been some of the interventions you have implemented to prevent or avoid Fintechs you have invested in from failing? Can you please describe some?

13. What would you say are the best practice measures to prevent Fintechs from failing?

14. What is success rate of FinTech start-ups compared to other start-ups? If they are higher (or lower), then why?

15. Which of these issues would you think are important constrains for FinTech start-ups' survival in your economy? (Select all that apply)
    a. Hard licensing of financial services
    b. Strict and high capital requirements
    c. No tax incentives
    d. Regulatory uncertainty
    e. Other (Specify):

16. How has the pandemic affected or benefited the FinTech industry?

Regulatory Framework

Section objective: Learn about the institutions' perspective of the regulatory framework surrounding the FinTech services.

17. Has the government promoted regulations to help start-ups? And FinTech specifically?

18. Which differences in regulation do you see among FinTech regulation and traditional financial institutions?

19. Is there a policy/policies to promote FinTech growth in the economy?

20. Is there a specific government program which provides financing to Fintechs?

21. Do you consider that the regulatory advantages faced by FinTech is higher compared to other start-ups? Please elaborate.

22. Are new FinTech services in line with current regulations?

23. Which regulations do you feel need to be reformed?

Information Request

Section objective: Ask sources from where we can analyze data on FinTech numbers and investment.

24. What is the source of public information on Fintechs, such as the current number of active startups, age, size, revenue, profits, as well as the evolution of investments (from public and private sector) in Fintechs?

Thank you very much for your time.

3. BUSINESS ASSOCIATIONS

Introduction

Thank you for taking the time to meet/speak with us. Before we start the interview, we would like to give you an overview of our company, A2F Consulting, a US, and Germany-based consulting firm. We are supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

These are the topics we would like to cover with you:

- Learn from your perspective the FinTech ecosystem in your economy.
- Understand the regulatory challenges faced by FinTech.
- Learn how your entity interacts with other actors from the FinTech ecosystem.
- Learn about the potential of FinTech for SMEs and private individuals.

The interview will take approximately 45 mins. Your individual remarks will remain confidential. We will take notes during the interview for reference purposes. Is that ok?

Do you have any questions before we start?

Information on the interviewee, and his/her organization

Section objective: Learn more about the entity and its business.

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Name of Institution:

FinTech Landscape

Section objective: Get an overview of the landscape of FinTech for SMEs.

1. Does your organization think that FinTech is an opportunity for SMEs? Why?

2. What is your perspective of the existing FinTech landscape in the economy?
    a. What advantages and disadvantages have you identified?

3. How is the business climate of your economy?
    a. Which challenges can it present for businesses adopting FinTech services? And SMEs?

4. How is the digital financial services ecosystem for SMEs?

5. Is there a sector-level difference in the adoption of FinTech services?

6. Is there a difference in FinTech adoption between rural areas and cities?

FinTech Services

Section objective: Get an overview of FinTech services implemented in SMEs.

7. How would you describe your organization's interaction with FinTech organizations?

8. Which FinTech services do you think are the most adopted by SMEs?

9. Which FinTech services do you think have a better potential for SMEs?

10. What do you think are the advantages SMEs might have from obtaining financial services from FinTech over traditional financial institutions? And what are the risks?

11. Do you think that SMEs face any challenges in obtaining FinTech services? What are they? What can be improved?

Regulation

Section objective: Get an overview of how regulation can affect SMEs hiring FinTech services.

12. Has the government influenced FinTech awareness and adoption for SMEs?
    a. How is your institution planning to improve it?
    b. What do you think is the best way forward in promoting FinTech services for SMEs?

13. What is your view on the issue of the regulatory framework for Fintechs overall, and particularly in catering to the needs of SMEs?
    a. How do you think the regulatory framework needs to change? Do you think it is going to change in the future?

14. Are there any government policies that have been implemented to improve FinTech adoption amongst SMEs? If so, have they been effective? Which of them have worked better than others?

Thank you very much for your time.

4. TRADITIONAL FINANCIAL INSTITUTIONS

Introduction

Thank you for taking the time to meet/speak with us. Before we start the interview, we would like to give you an overview of our company, A2F Consulting, a US and Germany-based consulting firm. We are supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

These are the topics we would like to cover with you:

- Understand the challenges that traditional financial institutions face compared to FinTech companies (regulatory, financial, infrastructure, ...).
- Understand the relation of traditional financial institutions with FinTech companies.
- Learn how you interact with other actors from the FinTech ecosystem.
- Learn about the potential of FinTech for SMEs.

The interview will take approximately 45 mins and your individual remarks will remain confidential and not be shared with the APEC Secretariat. The information and opinions you provide will be anonymized. Neither your name nor the name of your organization will be referenced in any document based on this survey. We are interested in your honest opinion and your input is valuable to support the work of the APEC Secretariat.

We will take notes during the interview for reference purposes. Is that ok?

Do you have any questions before we start?

Information on the interviewee, and his/her organization

Section objective: To learn more about the entity and its business.

Date:

Name of organization:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

FinTech Landscape

Section objective: Get an overview of the FinTech landscape.

1. What is your perspective on the FinTech landscape in the economy?
    a. What advantages and disadvantages have you identified?
    b. Do you see Fintech as an opportunity for the economy? If so, why? If not, why?

2. What according to you has been the evolution of FinTech in the economy during the last 5 years?

3. How do you see the future of the FinTech industry in the economy?

Relationships with FinTech Companies

Section objective: Learn about the relationship of the Institution and its interaction with FinTech companies.

4. Does your institution currently offer any FinTech services? If yes, what are they?

5. Do you see FinTech companies as a threat to traditional financial institutions? Why?

6. How would you describe the relationship of traditional financial institutions with FinTech companies (Competition or cooperation…)?

7. Which types of FinTech services you think have better collaboration potential with traditional financial institutions?
    a. Which of these types of services are of most interest to your institution?

8. Which factors do traditional financial institutions consider when they decide to outsource services to FinTech companies?
    a. Would the decision to outsource services to FinTech companies change if the company had one or more direct competitors as shareholders?

9. Are traditional financial institutions (including your institution) reluctant to outsource services to FinTech companies?

10. Which are the biggest internal challenges that traditional financial institutions (such as yourself) face when they want to deploy systems from young FinTech companies?

11. Do you think financial institutions face barriers implementing FinTech services that FinTech start-ups do not face (Capital requirements, tax incentives, etc…)?

Future Perspective

Section objective: Learn about the institution's perspective on the outlook for Fintechs in the financial services market.

12. Which sector do you think will be most affected by automated financial tools?

13. In the next 12 months, do you expect that traditional financial institutions will invest (take a shareholding) in any emerging FinTech companies? Why?

14. Which of the following statements do you agree with? (Please select all that apply)
    a. The new FinTech companies will strengthen the competitiveness of existing large financial firms.
    b. It is a good idea for banks to create funds to make strategic investments in innovative FinTech companies.
    c. Today's large financial corporations face the long-term threat of new technologies.
    d. Peer-to-peer lending is a threat to established banks.
    e. In ten years, Bitcoin, and other similar electronic currencies will be processed by banks as if they were conventional currencies.
    f. In ten years, finance will be radically transformed by technology.
    g. Most banks are struggling to keep up with technology.
    h. The emerging FinTech scene is turning into a bubble.
    i. Involvement in the emerging FinTech scene is good for the image of finance.

Regulatory Framework

Section objective: Learn about the institutions' perspective of the regulatory framework surrounding FinTech services.

15. Are authorities supporting the growth of an open ecosystem for FinTech that promotes innovation and ensures robust competition for the traditional financial sector? Please elaborate.

16. Is the regulatory environment surrounding Fintechs uncertain in your economy? Why?

17. Do you consider that regulation-wise, FinTech companies face advantages compared to traditional financial institutions when providing related services?

18. Are government authorities promoting initiatives and incentives that encourage merchants and other ecosystem actors to accept FinTech services? If yes, please provide a few examples.

SMEs FinTech Services

Section objective: Learn about financial institutions offering FinTech services for SMEs.

19. Do traditional financial institutions (including yourself) provide any FinTech services to SMEs? If yes, please specify.

20. What challenges have you encountered when working with SMEs? Probe further on each of these challenges

    a. Have you taken any steps to mitigate these challenges? How successful have they been?

21. Are there any specific regulations hindering traditional financial institutions from working with SMEs? Please elaborate.

22. What needs to change in the business environment to make it easier for traditional financial institutions to work with SMEs?

23. What feedback do you receive from SMEs on the support needed for access to finance?

24. What opportunities do you see to deepen/increase SME access to FinTech?

25. How can the public sector use FinTech to facilitate access to finance and financial solutions for SMEs?

26. Can you provide a few examples of SMEs using FinTech services?

Additional Comments

27. Do you have any suggestions or comments on the perspective of FinTech services in your economy?

Thank you very much for your time.

5. MOBILE NETWORK OPERATORS

Introduction

Thank you for taking the time to meet/speak with us. Before we start the interview, we would like to give you an overview of our company, A2F Consulting, a US and Germany-based consulting firm. We are supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

These are the topics we would like to cover with you:

- Understand the challenges you face related to enabling FinTech companies to provide their services
- Learn about the potential of Fintechs for SMEs.

The interview will take approximately 45 mins and your individual remarks will remain confidential and not be shared with the APEC Secretariat. The information and opinions you provide will be anonymized. Neither your name nor the name of your organization will be referenced in any document based on this survey. We are interested in your honest opinion and your input is valuable to support the work of the APEC Secretariat.

We will take notes during the interview for reference purposes. Is that ok?

Do you have any questions before we start?

Information on the interviewee, and his/her organization

Section objective: Learn more about the entity and its business.

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Company:

Interaction with FinTech

Section objective: Get an overview of the interaction of MNO's with FinTech

1. Does your organization provide mobile telecommunications services to FinTech companies?

2. How would you describe your organization's interaction with FinTech companies?

3. How has FinTech affected Mobile Network Operators in the economy?

Perception of factors limiting access to FinTech

Section objective: Get an overview of the factors that might pose a challenge for accessing FinTech.

4. Which, in your opinion, are the factors limiting individuals' and SMEs' access to FinTech. Probe further on each of the factors.

5. In your opinion, how can the public sector use FinTech to facilitate access to finance and financial solutions for SMEs?

6. What do you think can be done to improve the connectivity of mobile telecommunications services in the economy, especially in rural areas? Who is in the best position to do that?

7. Which regulatory constraints affect your ability to innovate in serving individuals? And SMEs?

    a. For each, what are the identified constraints and what kind of reforms are needed?

8. More broadly, what other constraints in the policy/regulatory/legal environment hinder your ability to provide mobile telecommunications services to SMEs and individuals? What reforms are required?

9. What other constraints hinder your ability to effectively provide mobile telecommunications services to SMEs and individuals? This could include education, language, technology, costs, culture, gender, religion, etc.

10. Do you think that the mobile internet and data rates for SMEs are high compared to other services (such as electricity)?

11. What types of internet speeds and corresponding tariffs are being promoted by your company to the SMEs? (Please detail price and speed for the top two)

Additional Comments

12. Do you have any suggestions or comments on the perspective of FinTech services in your economy?

Thank you very much for your time.

6. SELECTED FINTECH COMPANIES

Introduction

Thank you for taking the time to meet/speak with us. Before we start the interview, we would like to give you an overview of our company, A2F Consulting, a US and Germany-based consulting firm. We are supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

These are the topics we would like to cover with you:

- Understand the challenges you face (regulatory, financial, infrastructure, ...)
- Learn how you interact with other actors from the FinTech ecosystem.
- Learn about the potential of FinTech services for SMEs and particulars.

The interview will take approximately 45 mins and your individual remarks will remain confidential and not be shared with the APEC Secretariat. The information and opinions you provide will be anonymized. Neither your name nor the name of your organization will be referenced in any document based on this survey. We are interested in your honest opinion and your input is valuable to support the work of the APEC Secretariat.

We will take notes during the interview for reference purposes. Is that ok?

Do you have any questions before we start?

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Company:

Information on the interviewee, and his/her organization.

Section objective: Learn more about the entity and its business.

1. When was your company created?

2. Approximately how many employees are working in your company?

3. Does your company provide services internationally?
    a. If yes, could you provide a list of the economies your company operates in?
    b. If yes, could you tell me if there is an economy where it is easier to operate and why?

4. Are there economic/geographical sectors that are not reached by your company? If so, why?

5. How would you describe your target clients?

6. Which financial products are offered by your firm?

7. Who are your main investors?

8. Which is the relation of your company with traditional financial corporations? (Select all that apply)
    a. We provide services to them.
    b. We are competitors.
    c. Other (please specify):

9. What are the biggest challenges to scaling your business?

Information on the perception of regulatory constraints for FinTech companies

Section objective: Learn more about the challenges associated with FinTech regulation.

10. Would you describe the regulatory environment as favorable? If not, why?

11. Which regulatory barriers are you facing? (Select all that apply).
    a. Hard licensing of financial services

b. Strict and high capital requirements
c. No tax incentives
d. Regulatory uncertainty
e. Other (Specify):
f. None of the above

12. Have you identified any regulations that should be implemented in your economy to assist FinTech growth?

13. Which regulations implemented helped your company in reaching more SMEs?

14. How can the public sector use FinTech to facilitate access to finance and financial solutions for SMEs?

15. In your opinion, which FinTech ecosystems are more developed in the world?

16. Can you describe the challenges being addressed in these ecosystems?

17. What has been the role of public policy in the development of these ecosystems?

Information on Institutional Stakeholders help in the development of the FinTech

Section objective: Learn more about the relation of FinTech with institutional stakeholders.

18. Did you receive the support of any of the following types of institutional stakeholders?
    a. Incubator
    b. Accelerator
    c. Work hub
    d. Angel Investor
    e. Government Institution
    f. Other (Specify):

g. None of the above

19. Which institutional stakeholder do you consider to be the most important?
    a. Incubator
    b. Accelerator
    c. Work hub
    d. Angel Investor
    e. Government Institution
    f. Other (Specify):
    g. None of the above

Information on Technology Developers (including Mobile Network Operators) help in the operation of FinTech services

Section objective: Learn more about the relation of FinTech with technology developers.

20. What is the type of technology used in your business?

21. Have you identified any bottlenecks in providing your services?

    a. If yes, what are they?

22. Is your service accessible from rural areas?

Information on FinTech customers: Individuals. (If applicable)

Section objective: Learn more about FinTech individual customers.

23. Can you describe what kind of services your company provides to individual customers?

24. Does your service benefit individual customers?

25. What challenges have you encountered working with individuals?
    a. Have you taken any steps to mitigate these challenges?
    b. How successful have they been?

26. Are there any specific regulations hindering your institution from working with individuals?

    a. If yes, what are they?

27. What needs to change in the business environment to make it easier for your organization to work with individuals?

28. What feedback are you receiving from individuals on the support they need to access finance?

29. What opportunities have you identified to deepen/increase individual customers access to finance?

Information on FinTech customers: SMEs. (If applicable)

Section objective: Learn more about FinTech SME customers.

30. What kind of services do you provide for SMEs?

31. Is your service benefitting SMEs?

32. Can you describe what you think is the potential of FinTech for the SME sector?

33. In what way do you think your product can help women run SMEs?

34. What challenges have you identified working with SMEs? Probe further on each of the challenges identified

    a. Have you taken any steps to mitigate these challenges? How successful have they been?

35. Are there any specific regulations hindering your institution from working with SMEs?

36. What feedback are you receiving from SMEs on the support they need to access finance?

37. What are some products and services you would like to develop for SMEs?

38. What opportunities do you see to deepen/increase SME finance?

39. Do you enable SMEs to pay staff salaries over mobile money?

40. Do you offer any services that help SMEs improve business operations and reduce business risk?

41. Do you offer any digital solutions that connect SMEs with potential buyers?

42. Do you have any solutions that make it easier for SMEs to pay their suppliers?

43. Do you offer any business insurance products?

44. Which benefits have you identified when working with SMEs?

45. Have you identified any risks when working with SMEs?

Information on market environment/conditions

Section objective: Understand and assess how easy or difficult it has been to position the company in the market, what happened with competitors (if any), how was the buy in from clients, etc.

46. Companies face difficulties, obstacles, and barriers to start a business in many areas. In which areas (a to g) did you face the most difficult barriers? Please rank the following areas by relevance. Please rank them first (1), second (2), third (3), etc.

Rank:… ( ) a. Access to finance. e.g., there is a clear lack of access to start-up financing or starting point funding for young people

Rank:… ( ) b. Government regulations. there is a clear lack of access to start-up financing or starting point funding for young people

Rank:… ( ) c. Social/Cultural attitude towards entrepreneurship. e.g., Entrepreneurship (start-up business) is not appreciated and promoted enough by society

Rank:… ( ) d. Education, skills, and training. e.g., Education and training do not promote/encourage people to engage in business and to develop good business ideas. Education & training does not match market opportunities appropriately

Rank: … ( ) e. Business support (& physical infrastructure). e.g., there is clear lack of business support in terms of mentoring, business Counselling and access to working space as well as to business networks

Rank: … ( ) f. Corruption. e.g., Bribe, asking for shares by, making obstacles by powerful officials, etc

Rank: … ( ) g. Other (Specify):

47. How did you engage in mitigating these challenges?

48. Was it easy for your company to find financing support to start your business?

49. What are the biggest challenges in securing investment?
    a. Agreeing a valuation
    b. Relinquishing control over aspects of your business
    c. Providing the necessary information
    d. Agreeing other terms and condition of contracts
    e. Difficulty in stablishing a working relationship
    f. Time involved
    g. Other (Specify):

50. Have you faced any difficulties when positioning your company on the market?

51. As the landscape for FinTech companies is growing at a rapid pace, do you consider that the market competition is always loyal? Please elaborate.

52. What are your company's priorities for the next 12 months?

53. Which factors are likely to drive your company's future growth?

Thank you very much for your time.

6. FINTECH COMPANIES

Introduction

Thank you for taking the time to fill out this survey. Our company, A2F Consulting a US and Germany-based consulting firm. is supporting the APEC Secretariat to conduct an assessment on Public Policy, FinTech, and SMEs to propose recommendations for promoting a New Financing Ecosystem.

There are a few areas we would like to cover with you:

- Understand the challenges you face (regulatory, financial, infrastructure, ...)
- Learn how you interact with other actors from the FinTech ecosystem.
- Learn about the potential of FinTech services for SMEs and particulars.

The survey will take approx. 30 mins and your remarks will remain confidential and not be shared with the APEC Secretariat. The information and opinions you provide will be anonymized. Your name will not be referenced in any document based on this survey.

There are no right or wrong answers. We are interested in your honest opinion and your input is of excellent value to support the work of the APEC Secretariat.

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐

Other	☐
Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Company:

Information on the interviewee, and his/her organization.

Section objective: Learn more about the entity and its business.

1. When was your company created?

2. Approximately how many employees are working in your company?
   a. 0-100
   b. 101-500
   c. 501-1000
   d. >1000

3. How would you describe your target beneficiary/consumer? (Select all that apply)
   a. Individuals
   b. SMEs
   c. Non-financial Companies
   d. Financial companies (e.g., collaborative FinTech venture)
   e. Regulators

f. Other:

4. Which financial products are offered by your firm? (Select all that apply)
    a. Money Transfer and payments
    b. Financial Planning
    c. Insurtech
    d. WealthTech
    e. RegTech
    f. EWallet
    g. Blockchain
    h. Comparison
    i. Lending
    j. Crowdfunding
    k. Big Data
    l. Other:

5. Who are your main investors? (Select all that apply)
    a. Private Individuals
    b. Financial institutions
    c. Government
    d. Other (Specify)
    e. None of the above

Information on the perception of regulatory constraints for FinTech companies

Section objective: Learn more about the challenges associated with FinTech regulation.

6. Would you describe the regulatory environment as favorable for your business and your operations?

Yes	☐
No	☐
Don’t know	☐

7. Which regulatory barriers are you facing? (Select all that apply).
    a. Hard licensing of financial services
    b. Strict and high capital requirements
    c. No tax incentives
    d. Regulatory uncertainty
    e. Other (Specify):
    f. None of the above

8. Have you identified any regulations that should be implemented in your economy to assist FinTech growth?
    1.______________________________

    2.______________________________

    3.______________________________

Information on Institutional Stakeholders help in the development of the FinTech

Section objective: Learn more about the relation of FinTech with institutional stakeholders.

9. Did you receive the support of any of the following types of institutional stakeholders? Select all that apply.
    a. Incubator
    b. Accelerator
    c. Work hub
    d. Angel Investor
    e. Government Institution
    f. Other (Specify):
    g. None of the above

Information on FinTech customers: Individuals.

Section objective: Learn more about FinTech individual customers.

10. What kind of services are you providing individual customers?
    a. Money Transfer and payments
    b. Financial Planning
    c. Insurtech
    d. WealthTech
    e. RegTech
    f. EWallet
    g. Blockchain
    h. Comparison
    i. Lending
    j. Crowdfunding
    k. Big Data
    l. Other (Specify):

11. What are some products and services you would like to develop for individuals in the future?
    1.___________________________________
    2.___________________________________
    3.___________________________________

12. What opportunities do you see to deepen/increase individuals' access to finance?
    1.___________________________________
    2.___________________________________
    3.___________________________________

Information on FinTech customers: SMEs. (If applicable)

Section objective: Learn more about FinTech SME customers.

13. What kind of services are you providing SMEs?
    a. Money Transfer and payments
    b. Financial Planning
    c. Insurtech
    d. WealthTech
    e. RegTech
    f. EWallet
    g. Blockchain
    h. Comparison
    i. Lending
    j. Crowdfunding
    k. Big Data
    l. Other (Specify):

14. Are there any specific regulations hindering your institution from working with SMEs?
    1.____________________________________
    2.____________________________________
    3.____________________________________

15. What needs to change in the business environment to make it much easier for your organization to work with SMEs?
    1.____________________________________
    2.____________________________________
    3.____________________________________

16. What are some products and services would you like to develop for SMEs?
    1.____________________________________
    2.____________________________________
    3.____________________________________

Information on market environment/conditions

Section objective: Understand and assess how easy or difficult has been to position the company in the market, what happened with competitors (if any), how was the buy in from clients, etc.

17. What are your company's priorities for the next 12 months?
    a. Product Development
    b. Sales growth
    c. Improving leadership/Management skills
    d. Improving technical capabilities of our team
    e. Hiring additional staff
    f. Expanding to new markets
    g. Raising funding
    h. Other (specify):

18. Which factors are likely to drive your company's future growth?
    a. Increased industry regulation
    b. Changes in patent protection legislation
    c. Changes in the labor code
    d. Changes in tax environment
    e. Access to mentoring
    f. Additional R&D
    g. Accessing international markets
    h. Raising Finance
    i. Building High quality team

7. SMEs

Introduction

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- Learn how you interact with other actors from the FinTech ecosystem.
- Learn about the potential of FinTech services for SMEs and particulars.

The survey will take approx. 45 mins and your remarks will remain confidential and not be shared with the APEC Secretariat. The information and opinions you provide will be anonymized. Your name will not be referenced in any document based on this survey.

There are no right or wrong answers. We are interested in your honest opinion and your input is of excellent value to support the work of the APEC Secretariat.

Date:

Name of respondent:

Gender of respondent:

Male	☐
Female	☐
Other	☐

Do not want to reveal	☐

Position of respondent:

Email address:

Phone number:

Company Name:

Company type

Section objective: Learn more about the entity and its business

1. Which of the following descriptions best applies to your company?
    a. Cooperative
    b. Sole Proprietorship
    c. Corporation
    d. Limited Liability Company
    e. Partnership
    f. Joint Venture
    g. Non-Profit
    h. Other (Specify):

2. In which sector does your company operate?
    a. Oil & Gas
    b. Chemicals
    c. Basic Resources
    d. Construction & Materials
    e. Industrial Goods & Services
    f. Automobiles & Parts
    g. Food & Beverage

h. Personal & Household Goods
i. Health Care
j. Retail
k. Media
l. Travel & Leisure
m. Telecommunications
n. Utilities
o. Banks
p. Insurance
q. Real Estate
r. Financial Services
s. Technology
t. Other (Specify):

3. Does your company operate in rural areas?

Yes	☐
No	☐
Don't know	☐

4. Does your company provide services internationally?

Yes	☐
No	☐
Don't know	☐

5. How is your company categorized on the basis of size?
   a. Micro
   b. Small
   c. Medium
   d. Other:

Interaction with FinTech

Section objective: Learn more about the entity's interaction with the FinTech industry.

6. Please, select from this list the FinTech services that are familiar to you (Select all that apply):
    a. Money Transfer and payments (peer-to-peer payments and non-bank money transfers, in-store mobile payments, cryptocurrency EWallet, digital-only branchless banking, overseas remittances)
    b. Budgeting and financial planning. (Online budgeting and financial planning tools, online retirement, and pensions management tools)
    c. Savings and investments (Lending on peer-to-peer platforms, investment via crowdfunding platforms, online stockbroking, online investment advice)
    d. Borrowing (Online-only loan providers, online loan brokers)
    e. Insurance (using a premium comparison site, feeding information into an insurance-linked smart device, or app-only insurance.)
    f. Other (specify):

7. Do you think that FinTech can make your business improve?

Yes	☐
No	☐
Don't know	☐

8. How would you describe your organization's interaction with FinTech organizations?
    a. We have hired their services for internal use.
    b. We allow our customers to use FinTech services.
    c. We have no relation with FinTech.
    d. Other (Specify):

9. Which of these FinTech services has your company purchased (Select all that apply)?
    a. Money Transfer and payments (peer-to-peer payments and non-bank money transfers, in-store mobile payments, cryptocurrency EWallet, digital-only branchless banking, overseas remittances)
    b. Budgeting and financial planning. (Online budgeting and financial planning tools, online retirement, and pensions management tools)
    c. Savings and investments (Lending on peer-to-peer platforms, investment via crowdfunding platforms, online stockbroking, online investment advice)
    d. Borrowing (Online-only loan providers, online loan brokers)

e. Insurance (using a premium comparison site, feeding information into an insurance-linked smart device, or app-only insurance.)
f. Other:
g. The company has not purchased any FinTech service.

10. Which of these FinTech services is your company planning to purchase (Select all that apply)?
    a. Money Transfer and payments (peer-to-peer payments and non-bank money transfers, in-store mobile payments, cryptocurrency EWallet, digital-only branchless banking, overseas remittances)
    b. Budgeting and financial planning. (Online budgeting and financial planning tools, online retirement, and pensions management tools)
    c. Savings and investments (Lending on peer-to-peer platforms, investment via crowdfunding platforms, online stockbroking, online investment advice)
    d. Borrowing (Online-only loan providers, online loan brokers)
    e. Insurance (using a premium comparison site, feeding information into an insurance-linked smart device, or app-only insurance.)
    f. Other (specify):
    g. The company is not planning to purchase any FinTech service.

11. In case that you purchased a FinTech service, why did you think that a FinTech company was better than a traditional financial institution to purchase these services (Select all that apply)?
    a. Lower prices.
    b. More flexibility.
    c. I trust more FinTech than traditional financial institutions.
    d. Better quality of the service.
    e. Other (specify):

12. Which risks, according to you, are you facing when working with FinTech companies?
    1.___________________________________
    2.___________________________________
    3.___________________________________

13. Which challenges did you face in obtaining FinTech services for your organization (Select all that apply)?
    a. Regulatory problems

b. Infrastructure problems
c. High investment
d. Other (specify):
e. None of the above

14. How did you learn about FinTech companies (Select all that apply)?
    a. Advertisements
    b. Government campaign
    c. Friend recommendation
    d. Competitors were using it
    e. The FinTech company directly contacted us
    f. Other:

Regulation

Section objective: Learn about the institutions' perspective of the regulatory framework surrounding the FinTech services.

15. Has the government influenced FinTech awareness and adoption for SMEs in your economy?

Yes	☐	Specify how:________________________
No	☐	
Don't know	☐	

16. Is there a specific government program to promote the use of FinTech services amongst SMEs?

Yes	☐	Specify how:________________________
No	☐	
Don't know	☐	

17. Which is your level of trust in regulatory institutions? From 1 (No trust) to 5 (Total trust)

	Select one
Completely trust	☐
Slightly trust	☐
Neutral	☐
Slightly distrust	☐
Completely distrust	☐

Challenges for rural areas and gender

Section objective: Learn about the institutions' challenges when accessing to FinTech services.

18. Do you think that it is more difficult to have access to FinTech services in rural areas compared to cities?

Yes	☐	Specify how:_______________________
No	☐	
Don’t know	☐	

19. How do you think that access to FinTech can be enhanced in rural areas?
    1.___________________________________
    2.___________________________________
    3.___________________________________

20. Do you think that women-owned SMEs have more trouble getting into FinTech?

Yes	☐
No	☐
Don’t know	☐

21. How do you think that access to FinTech can be enhanced among women-owned SMEs?
    1.___________________________________
    2.___________________________________
    3.___________________________________