G20
SAUDI ARABIA 2020

GPFI
Global Partnership for Financial Inclusion

PROMOTING DIGITAL AND INNOVATIVE SME FINANCING

SME FINANCE FORUM

IFC
International Finance Corporation
WORLD BANK GROUP
Creating Markets, Creating Opportunities

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This report was produced by the World Bank Group for the G20 Global Partnership for Financial Inclusion under the Kingdom of Saudi Arabia's G20 Presidency. The report represents a stock-take of different cases and examples that highlight private business trends and regulatory approaches in G20 and non-G20 countries. The stock-taking exercise is not intended to be an analysis or evaluation of any particular model. Cases, including those referencing particular firms, financial products, or services, are presented for illustrative purposes only and do not constitute an endorsement by the World Bank Group, the G20 Global Partnership for Financial Inclusion, or its members.

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ACRONYMS

ADB	Asian Development Bank
AI	Artificial Intelligence
AML	Anti-Money Laundering
AFIN	ASEAN Financial Innovation Network
API	Application Program Interface
APIX	API Exchange
ASIC	Australian Securities and Investments Commission
B2B	Business-to-Business
B2P	Business-to-Person
BaaS	Banking-as-a-Service
BIS	Bank for International Settlements
BOT	Bank of Thailand
CBE	Central Bank of Egypt
CCAF	Cambridge Centre for Alternative Finance
CDR	Consumer Data Right Act (Australia)
CFT	Countering the Financing of Terrorism
CGAP	Consultative Group for the Advancement of the Poor
CMA	Saudi Arabia Capital Markets Authority
CRSPs	Credit Reporting Service Providers
EC	European Commission
DLT	Distributed Ledger Technology
DFS	Digital Financial Services
EBA	European Banking Authority
EU	European Union
FATF	Financial Action Task Force
FCA	Financial Conduct Authority
FSB	Financial Stability Board
FTC	Federal Trade Commission
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
GPFI	Global Partnership for Financial Inclusion
HLPs	GPFI High-Level Principles for Digital Financial Inclusion
IDB	Inter-American Development Bank
IFC	International Finance Corporation
ILO	International Labor Organization
IMF	International Monetary Fund

IoT	Internet of Things
KYC	Know-Your-Customer
LEI	Legal Entity Identifier
MAS	Monetary Authority of Singapore
MCA	Merchant Cash Advance
MENA	Middle East and North Africa
MFS	Mobile Financial Services
ML	Machine Learning
MNO	Mobile Network Operator
mPOS	Mobile Point of Sale
NFC	Near-Field Communication
NPCI	National Payments Corporation of India
OECD	Organization for Economic Cooperation and Development
OJK	Indonesia Financial Service Authority
P2P	Peer-to-Peer
POS	Point-of-Sale
PPP	Public-Private Partnership
PSD2	Payment Services Directive 2
PSPs	Payment Service Providers
PwC	PricewaterhouseCoopers
QR Code	Quick Response Code
RBI	Reserve Bank of India
SaaS	Software-as-a-Service
SAMA	Saudi Arabian Monetary Authority
SCF	Supply Chain Finance
SDGs	United Nations Sustainable Development Goals
SEC	Securities and Exchange Commission
SME	Small and Medium Enterprises
TReDS	Trade Receivables Discounting System
UAE	United Arab Emirates
UPI	Unified Payments Interface (India)
USSD	Unstructured Supplementary Service Data
WEF	World Economic Forum

GLOSSARY OF TERMS[a]

Anti-Money Laundering (AML): Set of laws, regulations, policies, and procedures designed to prevent criminals from disguising illegally obtained funds as legitimate income. In most cases, money launderers hide their illicit proceeds through a series of steps (layering) that make the ill-gotten gains appear to be obtained legitimately, enabling the illicit proceeds to be integrated into the financial system. AML is typically linked to Countering the Financing of Terrorism (CFT) (see below). The global standards for AML/CFT are established by the Financial Action Task Force (FATF) (see below).

Application Program Interfaces (API): Set of routines, protocols, and tools that specify how different software should interact. They allow the development of computer programs such as personal finance management applications that access a person's bank (or other) account information to provide a range of facilities (e.g. financial management tools).

Banking-as-a-Service (BaaS): Business model that enables FinTechs and other third parties that meet banks' security, legal, and compliance requirements to connect directly with the banks' systems via APIs so they can integrate the banks' API-driven products and services into their own offerings without obtaining their own banking licenses, allowing them to leverage the bank's regulatory infrastructure.

Big Data Analytics: Digital processes that examine large amounts of structured and unstructured data to uncover hidden patterns, correlations, networks, and other insights.

BigTech Firms: The largest (by market cap and users) and most dominant information and communication technology (ICT) companies, such as Alibaba, Amazon, Apple, Facebook, Google, Microsoft, and Tencent. BigTech firms are starting to offer digital financial products and services to its customers.

Countering the Financing of Terrorism (CFT): Set of laws, regulations, policies, and procedures designed to combat the financing of terrorist acts and of terrorists and terrorist organizations.

Cyber risk (a.k.a. cybersecurity risk): Probability of an online attack, data breach, or other event impacting an organization's information technology (IT) systems, in light of the likely consequences—e.g., the operational failure or disruption, financial loss, and reputational damage—of that event.

Cybersecurity (a.k.a. information technology security): Technologies, processes, and practices designed to protect digital networks, devices, programs, and data from attack, damage, or unauthorized access. Cybersecurity products/services track potential threats to IT systems and implement measures to combat them.

Digital Banks (a.k.a. challenger banks): New type of deposit-taking institutions that have full bank licenses and are members of a deposit insurance scheme but deliver banking services through digital (typically, mobile phone) channels, instead of physical branches.

[a] The glossary defines terms for the purposes of this report and is not intended to limit alternative definitions by other organizations or entities.

Digital Financial Services (DFS): Provision of financial products and services through digital channels. DFS are responsible when they are safe, fair, meet consumer needs, and comply with applicable regulatory requirements, including AML/CFT, consumer protection, cybersecurity, and privacy protections.

Digitalization: Use of digital technologies and digitized data to change a business model, impact how work gets done, transform how customers and companies interact, and provide new revenue and value-producing opportunities.

Digitization: Conversion of data, information, text, pictures, sound or other representations in analogue form into a digital form (i.e., binary code) that can be processed by computer.

E-Commerce (a.k.a. electronic commerce or Internet commerce): Buying and selling of goods or services using the Internet via computers, tablets, or other digital devices or mobile phones.

Equity Crowdfunding (a.k.a. crowd-investing or investment crowdfunding): Method of raising capital from investors (the crowd) online through the sale of securities (shares, convertible note, revenue share, etc.) in a private (typically, startup or early stage) company that is not listed on a stock exchange. Equity crowdfunding seeks to raise capital by obtaining small contributions from a large number of investors. Equity crowdfunding platforms match investors with companies seeking capital, enabling the general public to participate in the early capital-raising activities of startups and SMEs.

Financial Action Task Force (FATF): Global standard setting body for legal, regulatory, and operational measures for combating money laundering, countering terrorist financing, countering the financing of proliferation, and other related threats to the integrity of the international financial system. The FATF Standards are implemented, supervised and enforced through countries' AML/CFT legal frameworks.

FinTech: Technology-enabled innovations in financial services that could result in new business models, applications, processes, or products with an associated material effect on the provision of financial services.

G20 High-Income Countries: Classification[b] that refers to the following G20 countries: Australia, Canada, France, Germany, Italy, Japan, Saudi Arabia, South Korea, the United Kingdom, and the United States.

G20 Upper-Middle-Income Countries: Classification that refers to the following G20 countries: Argentina, Brazil, China, Mexico, Russia, South Africa, and Turkey.

G20 Lower-Middle-Income Countries: Classification that refers to the following G20 countries: India and Indonesia.

Greenfield: Approach to building a technology project from scratch, rather than developing it from legacy (hardware and software) systems.

Gulf Cooperation Council (GCC) (a.k.a. The Cooperation Council for the Arab States of the Gulf): Regional intergovernmental political and economic union consisting of all Arab states of the Persian Gulf, namely: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates (UAE).

Innovation Office: Unit of a government regulator established to engage with FinTechs and other industry players to support the development of responsible innovation in the financial sector. Innovation offices typically provide regulatory clarification on an individual basis or through more general guidance to financial services providers and technology services providers on the application of regulatory requirements to innovative products and services the entrepreneurs or innovators wish to introduce in the market.

[b] The classification follows the World Bank Group's classification of countries by income level, which is determined by each country's gross national income (GNI) per capita for the previous year (https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups).

Internet of Things (IoT): Global network of all Internet-enabled devices and machines that are connected to the Internet and can collect, send, share, and act on data, using embedded sensors, processors and communication hardware, without human interaction. The IoT generates an enormous amount of real-time data that can be analyzed and used to create desired actions or business outcomes.

Interoperability: Ability of different IT systems, software, and devices to access, exchange, and use information seamlessly in real-time, enabling all participants to operate across all systems.

Know-Your-Customer (KYC): Industry term for certain elements of the Customer Due Diligence (CDD) requirements established by the FATF and effectively implemented by countries' AML/CFT regimes. KYC is commonly used by industry to refer to a financial institution's process of identifying a customer and verifying the customer's identity at onboarding, but it may be used more broadly to also include: identifying the beneficial owners of legal person customers; understanding and obtaining information on the purpose and intended nature of the business relationship; and conducting ongoing due diligence on that relationship and monitoring the customer's transactions to ensure consistency with the financial institution's knowledge of the customer and risk profile. The term is also used to refer to the laws and regulations governing these activities.

Open Banking: Regulation that requires banks and non-bank financial institutions to provide, upon customer consent, third-party financial service providers parties—including FinTechs—open access to consumer banking, transaction, and other financial data in a secure, standardized manner through the use of application programming interfaces (APIs). Open banking seeks to increase competition and consumer choice by leveling the playing field between smaller and larger financial services (typically, traditional banks), thereby lowering the cost of consumer financial services.

Regulatory Sandbox: Environment in which FinTechs and innovators can test their products and services on a small scale and supervised by regulators.

Responsible Innovation in the Financial Sector: Innovative technology, products, services, and business models that meet user needs, are fit for purpose, are fairly priced, and comply with applicable regulatory requirements.

Small and Medium Enterprises (SMEs): Term that refers to micro, small, and medium enterprises.[c]

Sharing Economy (a.k.a. the collaborative economy, collaborative consumption (for goods), or gig economy (for services)): Economic system or model in which assets or services provided by individuals and/or businesses are shared, typically on a temporary basis and facilitated by digital platforms that create an open marketplace for the usage of the goods and services.

[c] A standard international definition of SMEs does not currently exist. The significant heterogeneity across jurisdictions in terms of SME definition is mainly because the "small" and "medium" categories are typically defined relative to the size of the domestic economy. Two key parameters are mainly used to define SMEs: (i) the number of paid employees, and (ii) financial threshold, such as revenue or total assets. For example, the Organization for Economic Cooperation (OECD) refers to SMEs as firms employing up to 249 persons, with the following breakdown: micro (1 to 9), small (10 to 49), and medium (50 to 249). The European Commission (EC) follows the same employee threshold, but it incorporates two financial thresholds: total assets less than or equal to 43 million EUR and total annual sales of less than or equal to 50 million EUR. IFC's definition of SMEs is slightly different when compared to the OECD and the European Commission; IFC defines SMEs as having less than 300 employees, total assets less than $15 million, and total annual sales of less than $15 million. For the purpose of this report, countries have submitted case studies based on their own national definition of SMEs. Throughout the report the term "SME" refers to micro, small, and medium enterprises.

EXECUTIVE SUMMARY

In 2020 the priority for the Global Partnership for Financial Inclusion (GPFI), under the Saudi G20 Presidency, is to leverage new technologies to boost financial access for youth, women, and small and medium enterprises (SMEs). This is a stock-take report that focuses on digital financial services and products for SMEs. Building on the work done under previous G20 Presidencies and GPFI partners,[d] the report provides an overview of innovative approaches and digital financial products/services that have been developed in G20 and non-G20 countries to address the SME financing gap, highlighting the Middle East and North Africa (MENA) region. It also highlights policy, regulatory, and supervisory considerations and approaches aimed at facilitating and promoting SME digitalization of financing and concludes with policy options to increase SME access to and use of digital financial services. This report is targeted to mid-level and senior national and state officials; central bank officials; payment service providers (PSPs); financial service providers, and business associations that aim to support increasing access to responsible finance to SMEs.

SMEs[1] are a major driver of job creation and economic activity in most developing and developed economies. Although precise numbers are hard to establish due to the fragmented nature of the global data and varying definitions of SMEs, formal and informal SMEs account for between 60 percent to 70 percent of the gross domestic product (GDP) of low-income, middle-income, and high-income countries.[2] They represent more than 90 percent of all businesses and provide more than 50 percent of employment worldwide.

However, lack of access to finance is a critical barrier to growth for SMEs globally. Among the reasons are higher cost to serve SMEs; information asymmetries, or the absence of traditional data used by banks to assess creditworthiness; lack of collateral; and onerous documentation requirements.

Recent advances in digital technologies and innovative business models represent a game changer that can help close the SME finance gap by enabling smaller firms to tap alternative sources of funding, thanks to the data generated by their digital footprint. The digital transformation of SMEs can reduce their operational costs and increase their productivity, which in turn can lead to more transparency and better access to finance. Digitalization also enables the introduction of new products and services, and a wider incorporation of SMEs into the formal economy leading to further financing opportunities. The increasing access to markets and new business models offered to SMEs by e-commerce and the sharing economy, together with data-driven business opportunities derived from data sharing in open banking frameworks, represent key enablers for digitalization. A foundational component for the use of digital financial products and the digitalization of SMEs is having reliable access to affordable mobile phone and Internet connectivity.

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d The report builds on the work done under previous G20 Presidencies starting with "G20 Action Plan on SME Financing" that was endorsed at the 2015 Antalya Summit under the Turkish Presidency and the "The Implementation Framework of the G20 Action Plan on SME Financing" which was adopted at the 2016 Hangzhou Summit under China Presidency of the G20. As part of the German Presidency in 2017, the GPFI endorsed the SME Finance Subgroup's report "Alternative Data Transforming SME Financing", which is also highly relevant for this report. Other relevant documents include the G20 High Level Principles for Digital Financial Inclusion, and the guidance note "Use of Alternative Data to Enhance Credit Reporting to Enable Access to Digital Financial Services by Individuals and SMEs Operating in the Informal Economy" and the policy guide "Digitization and Informality—Harnessing Digital Financial Inclusion for Individuals and MSMEs in the Informal Economy"; these were produced for the Argentina Presidency of the G20 in 2018.

The COVID-19 global pandemic is having a devastating impact on SMEs, with millions of small businesses being at risk of closing permanently if the crisis persists for several months, while others are suffering massive losses and laying off many of their staff. The situation is more dire in emerging market countries where there are limited government resources to help small businesses. Speed is important to provide the needed support during a crisis; therefore, the use of digital technologies is proving to be critical to help SMEs during these unprecedented times.

There are challenges that constrain the full potential of digitalization to increase access to SME finance and risks related to the use of digital financial products, which should be considered. Some of these challenges and risks, while affecting broader financial inclusion, have both a direct and indirect impact on SMEs. These include low levels of financial and business literacy, limited Internet connectivity and usage, non-reliable (company) identity frameworks, current regulatory frameworks, the lack of adequate data protection, and cybersecurity risks.

Policy options should be considered that address the challenges and risks of the digitalization of SMEs and that can promote a more conducive environment for facilitating SME access to finance through digital technologies.

The policy options addressed in this report are divided into three core areas:

A. **Develop a strong digital infrastructure base**

- Ensure that the necessary technology infrastructure/technology stack, digital hardware, and digital products and services are accessible to SMEs through a national digital transformation strategy.
- Define a risk-based regulatory framework that encourages responsible innovation and aligns with the core mandate of maintaining financial stability, financial sector integrity, and market competition.
- Encourage a trustworthy, robust and secure digital identity system for individuals and SMEs
- Improve the availability and accuracy of SMEs information, expand credit information sharing, and enable responsible cross-border data exchanges.

B. **Promote a literate, informed public with privacy protection and cyber risk management**

- Support strategies to promote the financial, business, and digital capability of SMEs.
- Minimize the risks associated with the digitalization of SMEs, particularly by ensuring data protection and privacy rights, and adequately managing cybersecurity risks.
- Ensure the responsible use of alternative data, consistent with applicable laws and good practices related to consumer protection, and remain vigilant to potential financial stability risks.

C. **Build open and competitive markets, in which partnerships are encouraged, to accelerate responsible innovation**

- Support robust, safe, efficient, and widely accessible digital payment systems and create incentives for merchants and SMEs to accept and for consumers to use them.
- Create the conditions that encourage bank-FinTech partnerships that may lower costs, strengthen financial inclusion and/or improve the quality of financial products and services for SMEs.
- Promote a level playing field to ensure that the benefits of e-commerce and the sharing economy result in an inclusive growth for SMEs.

The policy options and recommended actions above are indicative and voluntary. Countries need to consider their particular circumstances when acting in any and all of these areas. These policy options do not supersede or direct international standard setting bodies or other international bodies for regulatory coordination.

CHAPTER 1

BACKGROUND

The Role of SMEs in Economic and Social Development

Small and medium enterprises (SMEs) play an essential role globally in driving economic activity and job creation in all economies. Micro, small, and medium sized businesses account for 60 percent to 70 percent of the gross domestic product (GDP) of low-income, middle-income, and high-income countries.[3] They represent about 90 percent of businesses and more than 50 percent of employment worldwide.[4] SMEs are large contributors to employment growth, especially in developing economies,[5] and are an important vehicle of social inclusion in their communities. The younger firms, and those with fewer than 20 employees, are the highest contributors to employment growth globally.[6] Labor productivity growth is strong for SMEs. They gain access to formal credit at close to 2.5 percent, when compared to large firms at approximately 1.8 percent.[7] Based on World Bank estimates, 600 million jobs will be needed by 2030 to absorb the growing global workforce,[8] and SMEs will be responsible for the creation of nine out of ten new jobs worldwide.[9] Equally important, SMEs are embedded in their local communities and most often provide opportunities for women and other underrepresented groups to participate in economic activities.

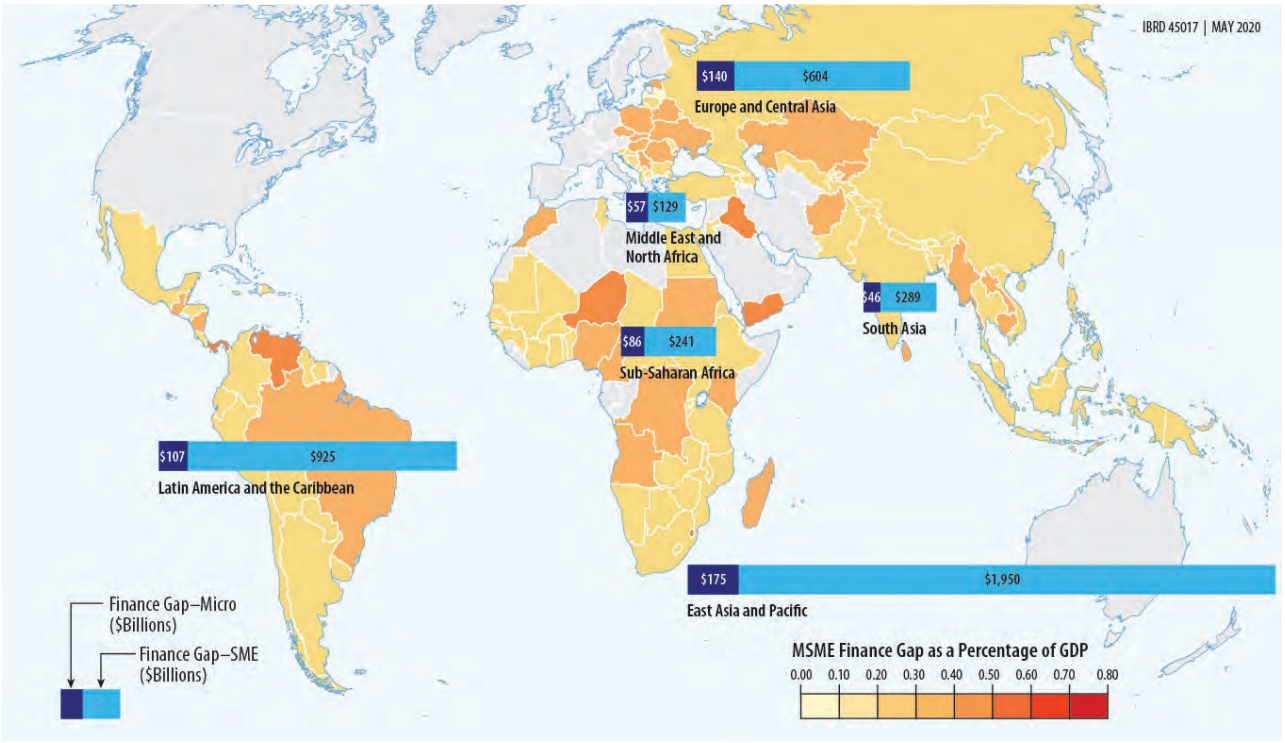
Access to Finance Remains a Key Challenge for SMEs

Despite their important role in job creation and economic activity, there is a SME finance gap as SMEs often struggle to obtain the financing necessary to start, sustain, and grow their businesses. A recent study based on extensive SME survey data from 135 countries shows that access to financing was reported as the most serious obstacle to their businesses.[10] SMEs are less likely than large firms to be able to obtain bank loans than are large firms, and instead they rely on internal funds, or cash from friends and family, to launch and initially run their enterprises. Globally, about half of formal SMEs do not have access to credit from regulated financial institutions[e] (Figure 1.1). The current finance gap for formal SMEs in emerging markets is estimated to be approximately $5 trillion, about 1.3 times the level of SME lending. When taking informal SMEs and SMEs from vulnerable and underserved groups into account, there is another $2.7 trillion of potential demand for finance.[11] The East Asia and Pacific region accounts for the largest share of the total finance gap, followed by Latin America and the Caribbean and then Europe and Central Asia. However, as a percentage of total financing demand by region, Middle East and North Africa (MENA) has the highest finance gap (84 percent), followed by Sub-Saharan Africa (81 percent) and Latin America & Caribbean (74 percent). (See Figure 1.2 and Figure 1.3) (See Box 2.1 for a discussion of the SME finance gap in the MENA region).

[e] 131 million or 41% of formal SMEs in developing countries are either fully or partially credit-constrained (https://www.smefinanceforum.org/data-sites/msme-finance-gap)

FIGURE 1.1

Formal SME Finance Gap in Developing Countries



Source: SME Finance Forum MSME Finance Gap Database. Data as of 2017.

Women-owned businesses comprise 23 percent of SMEs[f] and account for 32 percent of the SME finance gap.[12] Out of the total formal finance gap for SMEs in the East Asia and Pacific region (the largest share of the $5 trillion finance gap), 59% of the gap was attributed to women-owned SMEs. The majority of the women SME finance gap is in low-income and lower-middle income countries, where on averaged it represents more than 50% of the total finance gap. Based on World Bank studies, the higher access to bank accounts and lending to women, the higher the share of female-led businesses.[13]

FIGURE 1.2

SME Finance Gap by Region (Percent of total gap)

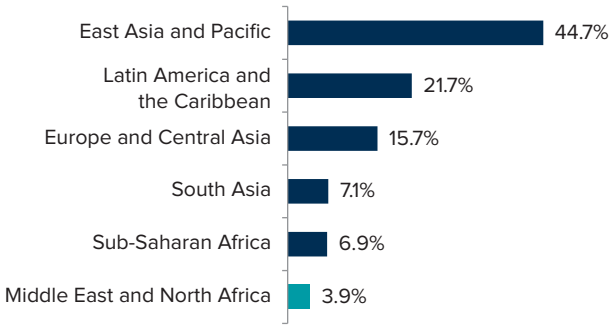
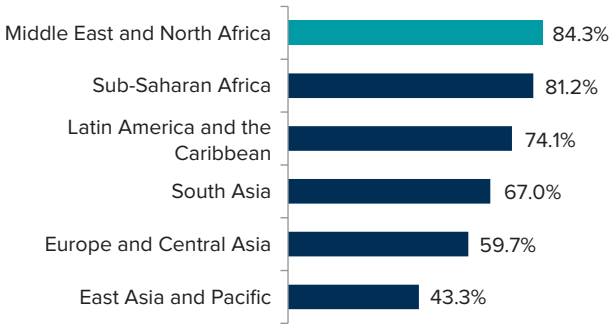


FIGURE 1.3

SME Finance Gap by Region (Percent of total financing demand)



Source: SME Finance Forum MSME Finance Gap Database. Data as of 2017.

[f] 28.5 million or 39% of women-owned SMEs in developing countries are either fully or partially credit-constrained (https://www.smefinanceforum.org/data-sites/msme-finance-gap)

Demand and supply factors can help explain the SME finance gap. A supply-side problem may occur when SMEs have potentially profitable investment projects but cannot get sufficient external funds to finance them. Supply side factors such as information asymmetry and/or weak creditor protection, may make it more challenging for financial institutions to assess the credit risk of SMEs, monitor their actions and enforce repayment. Information asymmetry arises from the fact that SMEs typically have less available information such as regular, quality financial statements when compared to large firms, making it difficult for banks to appropriately evaluate and monitor the credit risk posed by SMEs. A related issue is the lack of credit information for SMEs in many emerging markets. Another supply side factor is the high cost to reach and serve SMEs relative to the revenue potential that banks can achieve from them as customers. Relatedly, the high cost and limited availability of suitable financial products make it difficult for SMEs to obtain financing. The lack of collateral is also a major barrier to access finance; in emerging markets, many banks would only lend to SMEs that have available collateral. In addition, informality represents a major barrier to financial access for SMEs. According to the 2018 G20 GPFI Policy Guide, informality is broadly defined to encompass "all economic activities by workers and economic units that are in law or in practice not covered or insufficiently covered by formal arrangements, and includes businesses that have no fixed organizational structure, physical place of business and/or employees with fixed terms of employment."[14] About 80 percent of total SMEs are informal,[15] and these firms consistently report access to finance as the biggest constraint they face. Regulations typically prevent banks from serving entities that are not legally registered, licensed or lack required documentation for customer identification/verification, or are unable to provide reliable information to enable the financial institution to conduct other elements of customer due diligence, such as identifying beneficial owners or understanding the purpose and intended nature of the business relationship—all characteristics of informal SMEs.[9] A demand-side issue exists when SMEs are not creditworthy or bankable; the only way that financing could be provided without incurring losses would be through subsidized loans.

Women-owned SMEs and SMEs from vulnerable and underserved groups experience similar barriers to financing as men-owned SMEs, but there are significant non-financial barriers that exacerbate the challenge to obtain credit. Financial institutions view women-owned SMEs as higher risk, since women-owned businesses tend to be smaller and less formal. Women-led SMEs and SMEs from vulnerable and underserved groups also tend to have disproportionately lower access to collateral, and they are often overlooked as a viable business by financial service professionals. Key non-financial barriers include social and cultural norms underlying gender biases, where women are traditionally associated with home and health, while running a business is viewed as a male venture. Other important non-financial barriers include formal gaps in legal capacity and property rights that may constrain women in entering into contracts, limited access to business education opportunities and limited networks that enable them to access business opportunities.[16] Biases and discrimination can also affect other underserved groups and can be a factor in the financial exclusion of small businesses.

The finance gap experienced by SMEs makes the economic and social impacts of economic crises more severe and long-lasting. While traditional bank financing will continue to be crucial for the SME sector across all economies, there is a pressing need to develop a more diversified set of options for SME financing that can reduce their vulnerability to changes in credit market conditions, strengthen their capital structure, allow them to seize growth opportunities, and boost long-term investment.

9 It is widely recognized that most SMEs in developing countries operate in the informal sector and digital technologies can enable access to finance to these businesses as well as lead to formality and these topics are covered extensively in the "G20 Policy Guide: Digitisation and informality - Harnessing digital financial inclusion for individuals and MSMEs in the informal economy". Therefore, this report will mainly focus on micro, small and medium enterprises in the formal sector, where there is a significantly higher finance gap of $5 trillion.

BOX 1.1

Spotlight on the MENA Region

SMEs in the MENA region have the largest gap in financial inclusion in the world, according to the International Monetary Fund (IMF).[17] Based on the World Bank Enterprise Survey, 32 percent of firms in the MENA region report access to credit as a major constraint, compared with the global average of 26 percent.[18] The average SME finance gap as a percentage of GDP in the MENA region is the highest in the world at 26 percent, compared to the global average of 19 percent (Figure 1.4).

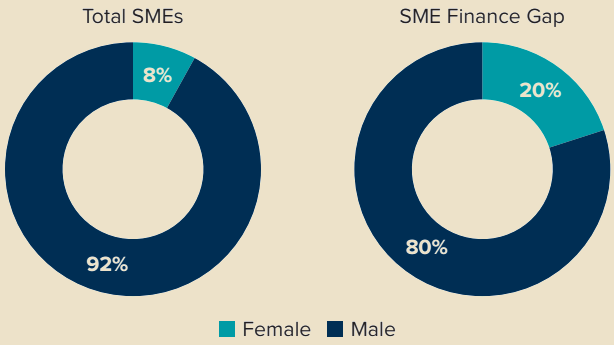
From a gender perspective, **women-owned SMEs make up only 8 percent of the total in the region, and account for 20 percent of the SME finance gap** (Figure 1.5).

To diversify the economy, increase employment, and promote private sector development, many governments in the MENA region have introduced policies to help SMEs. SMEs in MENA, are estimated to number 5.5 million and account for about $1 trillion in market value, representing 96 percent of total registered companies in the region.[19] Critically, they employ half the labor force, and have a vital role in promoting competitiveness, productivity, and diversification of the economy.[20] Yet their access to finance is the lowest in the world: lending to SMEs in the region is only 7 percent of total bank lending. SMEs in MENA face significant challenges accessing finance, including financial institution lending capacity, religious and cultural beliefs, enterprises' creditworthiness along with a lack of availability of high-quality credit information, and the availability of risk-sharing instruments **For women-led businesses in the region, access to finance is a major challenge, with 53 percent of women-owned SMEs not having access to credit.** In addition, 70 percent of surveyed MENA female entrepreneurs state that lending conditions in their economy are too restrictive and do not allow them to secure the financing needed for growth.[21]

According to a study from the IMF, closing the SME financial inclusion gap in the MENA region—with respect to the average of emerging and developing countries—would yield multiple economic benefits such as boosting annual economic growth by up to 1 percent, potentially leading to about 15 million new jobs by 2025.[22]

FIGURE 1.5

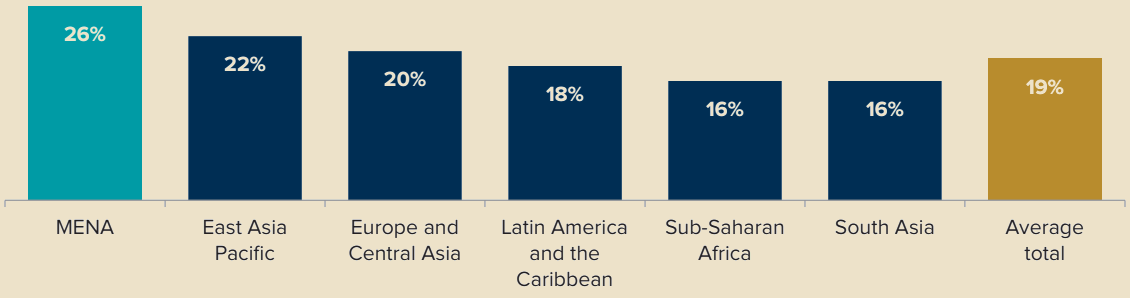
Women-Owned SMEs in the MENA Region



Source: SME Finance Forum. Data as of 2018.

FIGURE 1.4

SME Finance Gap as Percentage of GDP—by Region



Source: SME Finance Forum. Data as of 2018.

GPFI's Focus on SME Finance and Report Objectives

In 2020, the priority of the Global Partnership for Financial Inclusion (GPFI) under the Saudi G20 Presidency is to issue guidelines for policy makers and encourage taking actions to leverage new technologies to boost financial access for youth, women, and SMEs. Accordingly, this report focuses on digital financial services and products for SMEs. It builds upon work done under previous G20 presidencies starting with starting with the "G20 Action Plan on SME Financing" that was endorsed at the 2015 Antalya Summit under the Turkish Presidency, and the "The Implementation Framework of the G20 Action Plan on SME Financing" that was adopted at the 2016 Hangzhou Summit under the China presidency of the G20 and subsequently rolled out in 2017. As part of the German presidency in 2017, the GPFI endorsed the SME Finance Subgroup's report "Alternative Data Transforming SME Finance". Other relevant documents include: the G20 High Level Principles of Digital Financial Inclusion, the guidance note "Use of Alternative Data to Enhance Credit Reporting to Enable Access to Digital Financial Services by Individuals and SMEs operating in the in informal Economy," and the policy guide "Digitization and Informality—Harnessing Digital Financial Inclusion for Individuals and MSMEs in the Informal Economy." These documents were produced for the Argentina presidency of the G20 in 2018.

This report provides a stock-take describing the most promising innovative approaches and digital financial products that have been developed in G20 and non-G20 countries to address the SME financing gap, with a special focus on the Middle East and North Africa (MENA) region.[h] The report also discusses the regulatory and supervisory considerations that are aimed at facilitating and promoting SME digitalization of financing. **It concludes with a series of policy options for increasing SME access to and use of digital financial services.** The policy options and recommended actions are indicative and voluntary. Countries need to consider their particular circumstances when acting in any and all of the different areas. The policy options do not supersede or direct international standard setting bodies or other international bodies for regulatory coordination.

[h] A much shorter "chapeau" document, "G20 High-Level Policy Guidelines on Digital Financial Inclusion for Youth, Women, and SMEs", has been prepared to highlight the key findings and recommendations from this report. The chapeau document clarifies the linkages between the work on SME finance and other main GPFI deliverables on women's financial inclusion and youth financial inclusion. The chapeau document is structured to facilitate incorporation of key findings and recommendations into Ministerial and Head of State Communiques.

Methodology

Coordination with Other Workstreams

This report has been developed in close coordination with the GPFI Women Financial Inclusion and Youth Financial Inclusion work streams to address areas that may be complementary, particularly regarding access to digital financial products by women-owned SMEs and youth entrepreneurs.

Target Audiences

The target audiences for the report are mid-level and senior national and state officials; central bank officials; payment service providers (PSPs); financial service providers, and business associations that aim to develop and promote financial products for SMEs. This report may also be helpful for development organizations that are focused on improving digital financial inclusion for small businesses in emerging markets, and for private sector organizations that are supporting SME access to finance.

Approach

A stock-take describing the existing digital financial services solutions that currently serve SMEs in G20 and non-G20 countries has been performed, with highlights on the MENA region. The stocktaking exercise discusses business trends such as FinTech services, products, and business models that currently serve SMEs. It also covers regulatory frameworks and policies, and government and public-private partnership initiatives that utilize digital solutions to enable SMEs to obtain access to finance. This chapter does not advocate for a model or approach but uses cases for illustrative purposes. The approach consists of desk research, a collection of cases based on submissions from G20 constituents and MENA countries through the Arab Monetary Fund, and consultations with industry experts and global policymakers. Please refer to Appendix C for a list of other submitted cases.

Report Structure

To understand how digital technologies are impacting SMEs, the report reviews the main technology innovations and how each of them benefit SMEs in increasing access to finance. Then it explores the digitalization trends that address the barriers to the access to finance for SMEs from the following perspectives: (i) digitized SME financial products; (ii) digitalization of SMEs; and (iii) market enablers for the digitalization of SMEs and SME financial products. This is in the form of a stock-take of different cases and examples for G20 and non-G20 countries with a spotlight on the MENA region, highlighting business trends and regulatory approaches. While digitalization of financial services represents an opportunity, it comes with challenges and risks in the implementation and usage of these innovative products and business models that are discussed in the report before concluding with how these can be addressed by recommended policy options and actions for fostering digital SME finance.

CHAPTER 2

HOW DIGITAL INNOVATION IS A POTENTIAL GAME CHANGER FOR SME FINANCE

Digitalization as a Leading Enabler of SME Finance

New technologies are rapidly transforming the financial services sector and addressing several challenges that can help close the financing gap for SMEs. After the 2008/2009 global financial crisis, financial institutions scaled back their lending activity to SMEs and some retail customers due to higher capital requirements and deleveraging. In response, new business models were introduced to make processes more efficient, to better address customers' needs, to innovate, and to serve new customers, particularly those who had been excluded. At the same time, increased public and government interest in reducing poverty and improving financial inclusion for people at the "Base of the Pyramid" created demand for development of innovative and more accessible solutions for financial services delivery to unbanked, underbanked, and micro, small, and medium enterprises.

In this report, we examine digitalization[i] from a holistic view, taking into account three different perspectives: (i) digital financial products and how these products provide access to finance for SMEs; (ii) the digital transformation, or digitalization, of SMEs and how this can enhance efficiency, reduce cost of production, and increase profitability, ultimately helping SMEs attract more financing; and (iii) the impact of digital market enablers, such as e-commerce, a sharing economy, and open banking.

Responsible digital financial services (DFS), or the provision and usage of responsible and affordable financial products and services through digital channels, have the potential to be a game changer for SME financing globally (See Box 2.1 for a focus on the MENA region). The delivery of DFS can be through a number of players such as i) financial technology, (FinTech) firms, which generally focus on a particular financial product or service, and utilize new technologies and ways to do business to serve customers in a more efficient and transparent manner;[23] ii) banks and financial institutions that adopt these new products and services or may partner with FinTechs to deliver these products; and iii) BigTech firms, large technology companies that dominate the market for digital services, which are now offering digital financial products and services;[24] and (iv) Mobile network operators (MNOs).

These players are transforming the traditional lending process by automating the underwriting and loan servicing tasks making it significantly cheaper, faster, and easier to provide financing to SMEs. In addition, the use of alternative data and advanced data analytics is helping eliminate the information asymmetry and provide additional

[i] Digitalization is defined as the use of digital technologies and digitized data to change a business model, impact how work gets done, transform how customers and companies interact, and provide new revenue and value- producing opportunities.

information to assess the credit risk of SMEs. The data from digital transactions can help SMEs better understand their customer needs and patterns, thereby helping create new products and services. New applications make financial management, customer management and supply/value chain management tools affordable to smaller firms. The greater digital footprint of SMEs also leads to a proliferation of technology-focused alternative SME lenders who can take advantage of this treasure trove of digital data by decreasing the costs associated with loan origination and collection, and thereby increasing the profitability of serving the SME market. It is important to note that foundational components include having trustworthy proof of official identity, reliable access to affordable mobile phone and Internet connectivity, combined with affordable DFS that include micro enterprises and informal businesses in marginalized areas.

DFS can play an important role in encouraging informal enterprises to join the formal economy. In general, informal businesses have lower productivity than formal businesses, which can be a drag on the economy. Moreover, informal firms are restricted from accessing formal financing instruments, and workers in the informal sector lack social protections, such as insurance and pension benefits. However, the widespread adoption of mobile phones is making the use of digital financial services available to more people and firms, including informal businesses. Digital financial products such as digital payments can help informal businesses establish a credit history, potentially opening the door to formal financing.[25] Digital payroll systems and digital forms of identification can also help informal firms to register and operate as a formal firm, as well as to satisfy financial institutions' regulatory requirements for customer identification and verification, which in turn can lead to obtaining access to bank loans and other forms of formal financing.[j]

DFS are enabling women-owned SMEs to improve their ability to make business investments and obtain access to finance to run their businesses. Many studies have shown that DFS can increase women's financial autonomy, support women's participation in the labor force, and improve the performance of their business by increasing access to financing.[26] For instance, in Kenya, women market vendors who were provided with a mobile savings account were able to save more and increased their business investment by more than 60 percent when compared to a control group.[27] DFS lowers administrative and disbursement costs of financial products, provides more transparency, and the financial footprint made possible through digital payments allows for alternative methods to evaluate the credit risk of women who do not have traditional bank accounts, loans or financial transaction history.

[j] It is important to note that the topic of digitalization and informality for individuals and SMEs has been covered in the "G20 Policy Guide: Digitisation and Informality – Harnessing digital financial inclusion for individuals and MSMEs in the informal economy". Thus, the focus of the report will be on how DFS enables access to finance to SMEs in the formal sector.

BOX 2.1

Digital Financial Services

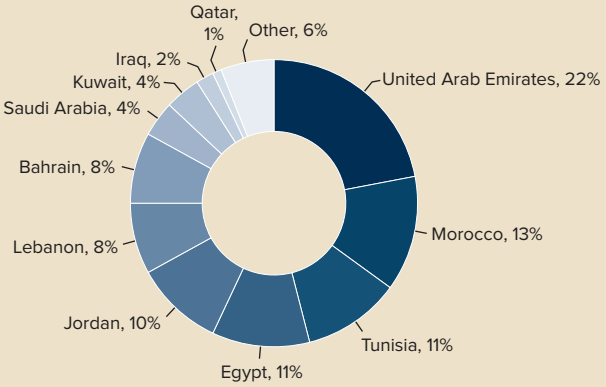
SPOTLIGHT ON THE MENA REGION

The MENA region faces numerous challenges as it relates to financial inclusion for SMEs and individuals. According to the World Bank Global Findex Report 2017, only 43.5 percent of adults in the MENA region (not including high-income economies) have access to formal financial services.[28] Although the region has 60 percent of the population under the age of 25 years old, it has the highest rate of unemployment for youth in the world, reaching 30 percent in 2017.[29] Moreover, the region has the world's largest gender gap, with only 35 percent of women holding a formal financial account, compared to 52 percent of men.

Responsible DFS present a unique and timely opportunity to close the financial inclusion gaps, particularly related to SMEs, women, and rural populations. There is high mobile phone penetration in the MENA region, and 86 percent of men and 75 percent of women who do not have bank accounts own a mobile phone. As is the case in other emerging market countries, the mobile phone could serve as a distribution channel for digital financial products and services. DFS solutions have been emerging in the region since 2013, providing access to capital to SMEs and individuals. Approximately 85 percent of all solutions are offered by independent providers, such as new FinTech ventures, while the rest are offered by large tech companies, banks, and mobile network operators (MNOs). The Consultative Group for the Advancement of the Poor (CGAP) has identified 319 FinTech new ventures operating across 22 countries in the Arab world.[30] Although there are FinTechs across every country in the entire region, the majority (75 percent) are concentrated in the United Arab Emirates, Lebanon, Jordan, and Egypt (Figure 2.1).

FIGURE 2.1

FinTech Solutions in the MENA Region



Source: CGAP Blog (October 29, 2019). Mapping Fintech Innovations in the Arab World.

FinTechs in MENA are mainly focused on providing payment solutions, marketplace lending and equity crowdfunding for individuals and SMEs. Most FinTechs are relatively young providers with the majority of them in early growth stages and thus their impact is still limited. National governments in the MENA region are contributing to the rapid FinTech development through various measures ranging from funding support to the establishment of attractive legal and regulatory frameworks for accelerators and incubators. The continued development of FinTech could underpin greater financial inclusion for SMEs and underbanked population groups in the MENA region.

Key Technologies Transforming Financial Services and Impacting SMEs

Key advances in technology are impacting how SMEs finance their business and transform their operations. The main technology innovations that are having the biggest impact on the financial services sector and ultimately helping SMEs can be divided into two major categories:

A. **Infrastructure/Pillars**—refers to the foundations that new business models and financial products can be built and/or developed on. The following technology innovations fall in this category:

- Cloud computing
- Blockchain/Distributed ledger technology (DLT)
- Internet of Things (IoT)

B. **Enabling Tools and Channels**—refers to technology innovations that can serve as distribution channels enabling the use of digital financial products and/or serve as tools in the development of new business models and financial products such as the following:

- Mobile phone/Internet connectivity
- Algorithms for Big Data analytics
- Artificial Intelligence (AI)/Machine Learning (ML)
- Application Programming Interface (API)
- Quick Response (QR) code

All these technological innovations serve as the foundation for the development of new business models and financial products that are helping to address the SME finance gap and the source to the following:

- New digital financial products that FinTechs, BigTech companies, and other financial institutions are offering to SMEs and individuals
- Software solutions and tools that SMEs can use to digitally transform their businesses
- Business models such as e-commerce, sharing/gig economy and open banking that have been key enablers to the growth of digital financial products and the digitalization of SMEs

In many instances, these innovations overlap and feed off each other making them mutually reinforcing. For example, a digital lending application that is distributed through the mobile phone can be developed using cloud computing technology. The application can leverage AI/ML and Big Data analytics for the evaluation of the borrower's credit risk by using a wide variety of alternative data sources such as mobile call records, digital payments, social media, and so forth. The strong complementarities between these various innovations reinforce their disruption potential. Table 2.1 summarizes the different technology innovations that serve as the foundation to new business models and financial products/services.

TABLE 2.1

Summary of Technology Innovations Serving as the Foundation for New Business Models and Digital Financial Products

Category	Technology Innovation	Description	Potential Benefits
Infrastructure/Pillar	**Cloud Computing**	Broadly defined, cloud computing is the delivery of computing services—including servers, storage, databases, networking, software, analytics, and intelligence—over the Internet ("the cloud"). There are several models of cloud computing, with different business models and services. This paper assumes a "public cloud" model in which all hardware, software, and other supporting infrastructure is owned and managed by a third-party cloud service provider, typically on an "as-needed" or "on-demand" basis, in which users pay only for cloud services they use.	Cloud computing can provide significant benefits to large and small enterprises, such as: • **Cost savings**—Cloud computing reduces both capital costs and operating costs. At the most basic level of the cloud computing stack—infrastructure as a service (IaaS)—firms can run their software applications in the cloud, eliminating the need for their own IT infrastructure and related assets (i.e., eliminating the need to buy their own hardware and set up and operate on-site datacenters—including the servers, electricity for power and cooling, and IT experts to manage the infrastructure. Firms also typically pay only for the computing services they actually use. • **Scalability and agility**—cloud computing enables firms to quickly scale their computing resources up or down, as needed • **Faster development and implementation of applications**—cloud computing significantly reduces time-to-market in the development of applications from months to weeks or days by enabling firms to focus on application development and deployment, not managing and maintaining infrastructure; to leverage cloud-native technologies and approaches and databases; and to scale their use of cloud infrastructure (and as applicable, platforms and updated software) to meet evolving needs • **Greater cybersecurity and reliability**—Cloud computing makes data backup, disaster recovery, and business continuity easier and less expensive because data can be mirrored at multiple redundant sites on the cloud provider's network. Also, (depending on the cloud provider) cloud computing can enable firms to more readily protect their data and applications from potential cyber threats
	Blockchain/Distributed Ledger Technology (DLT)	Blockchain, a form of distributed ledger technology (DLT), is a *decentralized, distributed* digital ledger that records ownership and transactions across a network of computers and relies on consensus algorithms and cryptographic methods to add transactions to the ledger in sequential, time-stamped immutable blocks (hash-linked data structures). Once added, the block remains part of the blockchain, providing a complete transaction record. Different blockchain protocols (the core, underlying software code for a particular blockchain system) use different algorithms and cryptographic methods to validate and settle transactions by adding them to the ledger in chronological order. The ledger is encrypted as it is written and the transactions it contains can be verified by all other computers (a.k.a. nodes) on the network. Depending on the underlying protocol, a blockchain may be either an open, public (permission-less) platform or a closed (permissioned) system. An open blockchain can be used by, and provides a distributed ledger visible to, anyone who downloads its open-source software. Closed blockchains operate as private platforms hosted on restricted server networks, in which only authorized members of the network are able to read and/or write to the ledger. In all cases, however, blockchains eliminate the need for a traditional central authority or trusted third party to certify ownership of assets and settle and guarantee transactions. The term, "blockchain," is also used colloquially and interchangeably with the broader term "distributed ledger technology".	Blockchain can help financial service providers better target SMEs in a number of ways, from providing a time-stamped, immutable record of (verified) identity credentials for customer identification/verification, to broadening the information available for assessing creditworthiness and reducing loan risk, to improving trade finance by enabling participants from different sectors—e.g., finance and freight shipping—to interact and share information in a more easily verifiable and decentralized manner. By providing a single mechanism for tracking various steps in the trade finance process—orders, contracts, documentation, shipments, customs, delivery—blockchains could enhance interoperability among previously incompatible systems, improve accuracy and eliminate redundancy. In addition—where permitted by the securities laws and regulations and subject to applicable AML/CFT and other regulatory controls—issuing tokenized securities on a blockchain as an adjunct or alternative to crowd funding could further decentralize capital markets and provide fully automated settlement and custody activities that are currently undertaken by traditional financial intermediaries, potentially broadening access and lowering financing costs for SMEs.

Category	Technology Innovation	Description	Potential Benefits
	Internet of Things (IoT)	IoT refers to the global network of billions of Internet-enabled devices and machines that are connected to the Internet, collecting, generating and sharing data. As of January 2020, an estimated 31 billion IoT devices were connected to the Internet, with 35 billion IoT devices expected to be connected by 2021 and 75 billion by 2025.	IoT offers many benefits for SMEs and large firms, including operational efficiency better understanding of customers to deliver enhanced and customized services, and improved decision making, all of which can increase the value of the business. For example, the IoT can help SMEs and large firms readily predict the exact quantity/ date of needed supplies; leverage intelligent water consumption and energy management; and minimize the human involvement needed to control or deploy their Internet-enabled devices or machines.
Enabling Tools and Channels	**Mobile phone/Internet connectivity**	Together with Internet connectivity, mobile phones have been designed to allow people to communicate wirelessly almost everywhere at all times and are transforming how individuals conduct business and interact socially. A major development in the financial services market over the last few years has been the increasing use of mobile phones to access financial services, perform financial transactions and manage personal finances, or as it is commonly referred, mobile financial services (MFS) or mobile money.	Mobile phone/Internet connectivity serves as the foundation for the delivery of digital financial products to SMEs, as well as a critical component in the digital transformation of SMEs. Internet connectivity via computers and mobile phones can improve information and knowledge management within SMEs, leading to better firm performance
	Big Data Analytics	Big Data refers to the exponential amount of structured and unstructured data that is being generated continuously through by different digital devices. The analytics of Big Data helps seeks to make sense of the data by identifying patterns, relationships and interactions	The use of Big Data analytics provides a wide range of opportunities for SMEs, such as better understanding of their business processes, clients' needs and the overall characteristics of the markets in which the business operates. Big Data analytics also makes it easier and cheaper for banks, FinTechs and BigTech companies to assess the creditworthiness of businesses. It also has potential to strengthen AML/CFT regulatory compliance, including compliance with transaction monitoring and identifying and reporting suspicious transactions obligations, as well as to improve anti-fraud measures and support customer identification/verification and ongoing customer due diligence
	Artificial Intelligence (AI)/Machine Learning (ML)	AI refers to the analysis of data to model some aspect of the world by using computers and models that learn from the data in order to respond intelligently to new data and adapt their outputs accordingly. ML is defined as the set of techniques and tools that allow computers to "think" by creating mathematical algorithms based on accumulated data. There are two types of ML: supervised and unsupervised. Supervised learning uses algorithms that have been trained by humans on how to map from input to output. On the other hand, unsupervised learning uses algorithms that are trained by itself, by looking at regularities in the input data without any instructions as to what to look for. It is the ability of the algorithm to change their output based on experience that gives ML its power	AI and ML can unlock value from the vast amount of data found in the databases of traders, banks, logistics companies, and others that could - in combination with alternative data sources - be algorithmically predictive in guiding risk management to unlock SME finance. Credit scoring models using AI and ML have made it possible to serve SMEs that had no access to finance in the past. Like Big Data analytics, AI/ML also has potential to more accurately and efficiently identify money laundering and Identify or predict fraud. It thus could strengthen firms' AML/CFT regulatory compliance, while reducing compliance costs and fraud losses.
	Biometric technologies	Refers to the digital capture and storage of unique characteristics, such as fingerprint, iris, voice and face, primarily with the purpose of increasing security and convenience of financial transactions	Biometric technologies can help with client onboarding and meeting Know Your Customer (KYC) requirements. In addition, in some cases, biometrics are used as a way to approve digital payment transactions, which can simplify the payment process for retail merchants
	Application Programming Interface (API)	An API is a set of definitions and protocols that allows one software program to communicate with another. APIs function as building blocks for developing applications. By allowing one software program to get access to the data or functionality of another program, using a simple set of rules, APIs enable developers to leverage other programs and build applications much faster. APIs enable a wide range of innovative products and services that millions of people use every day.	Open APIs (APIs that anyone can use for free) are the major enabling technology behind the Open Banking initiative that is transforming the financial services sector. They and can ultimately help SMEs transform digitally, by allowing FinTechs to provide customized digital products and services to SMEs, helping them to digitalize their operations. APIs can also be used to provide trustworthy digital identity solutions for customer identification/verification at onboarding land for authenticating customer identity to authorize access to the customer's account.
	Quick Response (QR) Codes	Quick response (QR) codes are a two-dimensional type of barcode that can store more information than a barcode and are faster to read. QR Codes are currently being used by merchants in digital payment applications	QR codes can be read by smartphones or tablets, enabling SMEs to accept digital payments without purchasing expensive point of sale (POS) or electronic data capture (EDC) terminals in order to accept payments, thus lowering operating costs. QR codes also offer a user experience that is at least as good as cash, if not better. Customers and SMEs that adopt the use of QR codes do not need financial education or technical sophistication to use them for payments.

CHAPTER 3

SME FINANCE DIGITALIZATION TRENDS

This chapter explores the digitalization trends across the SME landscape that are playing a key role in reducing the SME financing gap. The trends are evaluated holistically from three different perspectives: (i) digital financial products for SMEs; (ii) digitalization of SMEs; and (iii) market enablers to the digital transformation of SMEs and the digital financial products for SMEs. Recent advances in technology have disrupted the financial services sector resulting in new business models and digital financial products that are serving as alternative sources of finance for SMEs. At the same time, SMEs are seeing significant benefits, such as lower costs and higher revenues, by digitally transforming their operations through different software solutions. By digitizing SME transactions and operations, alternative data is generated that can be useful for evaluating the credit risk of small businesses and for enabling open access to alternative sources of financing. Finally, e-commerce, the "sharing economy" and digital banking have served as market enablers in the emergence and evolution of digital financial products and have also contributed in the digital transformation of SMEs.

The chapter is structured in three main sections: (1) Business trends and developments, (2) Regulatory policy issues and (3) DFS COVID-19 impact and response. Business trends and developments refer to digital financial products being developed by FinTechs, BigTech companies, and financial institutions. They also include the software solutions developed by different companies to aid in the digital transformation of SMEs, as well as the market enablers mentioned above. Regulatory policy issues address regulatory frameworks, government-led programs, and public-private partnerships that are enabling the emergence of digital financial products and the digitalization of SMEs. Case studies and examples for G20 and non-G20 countries and the MENA region are presented to illustrate each of the perspectives mentioned above. Finally, the last section discusses how SMEs are being impacted by the COVID-19 global pandemic and how digital financial services can help in the crisis and recovery phases.

Business Trends and Developments

Digital Financial Products for SMEs

There are two essential components of most of the digital lending products: digital payments and credit scoring using alternative data. The use of digital payments creates a digital footprint of financial activity conducted by a business. FinTechs are using this digital transaction data, together with other sources of alternative data (mobile phone call records, utility bill payments, and so forth), to develop new credit risk models and algorithms to better evaluate an SME's ability to pay. These new models are opening access to financing for SMEs that did not qualify under traditional methods, such as using data from credit bureaus.

Digital Payments

Digital payments refer to transfers of value that are made using digital or electronic devices and channels to transmit data. Digital payments include payments initiated by debit or credit card, mobile phone, computer, tablet, or wearable digital device.

The opportunity to digitize SME payments is significant; the World Bank Group estimated that out of the $38 trillion

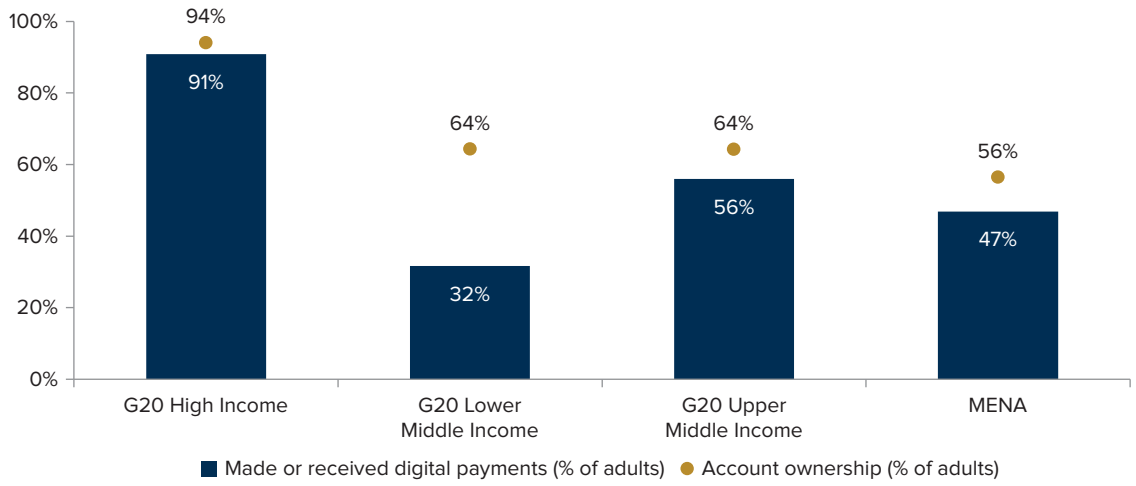
worth of payments that micro, small and medium-sized enterprises accept from customers each year, $19 trillion are made in cash.[31] A large portion of these cash payments are made in developing economies, where the penetration of debit and credit cards as well as bank accounts is low. Figure 3.1 shows that the average use of digital payments is highly related to account ownership and income level for the G20 high-income countries. On the other hand, less developed G20 countries have significantly lower average electronic payment usage, but account ownership is significantly higher than electronic payment usage, which means that there are other factors affecting digital payments adoption rate. For the MENA region, we see a similar pattern as the G20 lower-middle-income and upper-middle-income countries.

The introduction of new technologies, alternative delivery channels, and new business models has resulted in double-digit growth rates for digital payment transactions over the last five years, with the fastest growth in emerging economies. Digital payments transactions have been growing at a staggering rate of 22 percent in emerging countries over the last five years.[32] This growth is partially driven by e-commerce and the use of mobile payment solutions. It is expected that the growth rate of digital payments transactions will remain fairly high at 14 percent CAGR for the next five years.[33] Below is a brief summary of the most influential technology innovations, alternative delivery channels and new business models that are impacting the evolution of digital payments.

- **Mobile phone/Internet**—The advent of the mobile phone has made it possible to conduct payments through text messages, mobile browser, in-application, and mobile point of sale (MPOS). Due to the wide availability of mobile phones in developing and developed economies, the mobile phone serves as a key distribution channel for making payments and other financial products. In emerging markets, the rise of mobile money has made it possible for transfer of cash between individuals and small businesses using text message based on Unstructured Supplementary Service Data (USSD) and agents for cash-in/cash-out without the need for a bank account; more recently, mobile money is becoming more prevalent as a method of payment with merchants in less developed countries.
- **Contactless technology**—Refers to technology that facilitates the acceptance of payment instruments at the point of sale without the need for physical contact between the payee's acceptance device and the payer's acceptance instrument.[34] Two of the most commonly used contactless technologies today are near field communication (NFC), which uses radio frequency identification (RFID) to communicate with the merchant's POS terminal, and Quick Response (QR) codes, a 2-D barcode that allows any device that can scan to process a payment with no or limited data entry.
- **Big Data analytics**—The use of Big Data analytics can help in the customer onboarding through screening processes as well as improve the precision of real-time approvals.[35] Throughout the transaction process, Big Data analytics is leveraged for risk mitigation and to detect and prevent fraud and other malicious activities. Big Data analytics is also used by merchants to better

FIGURE 3.1

Comparison of Digital Payment Usage vs. Account Ownership—2017



Source: Global Findex.

understand customer behaviors and buying patterns, in order to provide more customized products.

- **Application Programming Interfaces (APIs)**—APIs can be used in the KYC process as well as to support checks on AML/CFT by enabling select data to be shared among financial institutions. Also, APIs facilitate the integration between payment service providers and merchants, especially in the e-commerce area.[36]
- **Biometric technologies and digital identity systems—** Biometrics can be used to (1) provide identity attributes (identifiers) to help establish an individual's identity and (2) to provide an authentication factor for helping to conduct customer identification/verification at onboarding and the authentication of the customer's identity for authorizing account access and conducting transactions. Trustworthy digital identity systems—including those that rely in part on biometrics—can help prevent and detect money laundering, terrorist financing, fraud, and other illicit financial activities in digital payment transactions. Digital identity systems can also provide a better user experience for illiterate end users in emerging markets and facilitate greater adoption of digital payments.

The adoption of digital payments provides significant benefits to small and medium businesses globally. Digital payments can lower the delivery and transaction costs for merchants, as well as reduce fraud and chargebacks. Services such as Google Pay allow business owners and shops to use the application with their bank account to accept digital payments from consumers. The payments go directly into the merchant's bank account with minimal or no fees. Moreover, some electronic payment solutions enable payments processing to be integrated with accounting functions, achieving efficiencies that save merchants time and money. The integration with other services provides merchants with a comprehensive solution for managing their business, such as better inventory and sales management, and offers additional value and improved profits.[37]

The most valuable consequence of digitizing payments may be the massive amount of detailed transactional data that is generated.[38] FinTechs, banks, and BigTech firms can use digital transaction data as important data points to evaluate the credit risk of merchants in order to offer loans and other financial products to these small businesses that may have not had access to financing in the past. For instance, 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. Accelerating the development of digital payments for merchants to generate digital transaction data can thus help countries advance overall financial access and financial inclusion by driving access and usage for individuals and SMEs.[39] Digital payments can also help formalize SMEs in emerging markets, which in turn can lead to the increase of overall economic output and expansion of the tax base.

Although digital payments provide significant benefits to SMEs, there are challenges and risks hindering their adoption and use. In particular, unreliable mobile / Internet connectivity, restrictive regulatory frameworks, interoperability, high transaction costs, data privacy and data protection, and the potential for fraud are some of the most common challenges and risks. Refer to Chapter 4 for a detailed description of the digital payments challenges and risks.

CASE STUDY: SQUARE (UNITED STATES)

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 $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. Mobile point of sale systems, or mPOS, have grown exponentially around the world since Square introduced it, with many FinTech companies offering low-cost card reader devices that can be attached to mobile phones and tablets to replace cash registers. In addition, most mPOS systems offer integrated software solutions to help manage sales, invoices, accounting, inventory, and payroll. An important feature of Square's business model is that it is able to stand in as merchant of record for small businesses that otherwise might not qualify for a merchant account, taking on certain risks and responsibilities in the card network schemes and rules.

BOX 3.1

Digital Payments

SPOTLIGHT ON THE MENA REGION

The adoption of digital payments remains fragmented throughout the MENA region, which appears to be correlated with the income level and percentage of adults owning a bank account in each country. The Gulf Cooperation Council (GCC) countries, which are also high-income countries, have well-established digital payments infrastructure and high bank account ownership, resulting in more than 80 percent of adults on average making digital payments (Figure 3.2). On the other hand, non-GCC countries, which have lower GDP per capita, still heavily rely on cash transactions due to low bank account ownership levels (average account ownership at 37 percent vs. 81 percent average account ownership for GCC countries) leading to only 24 percent of adults on average making digital payments. Additionally, out of the $0.8 trillion of payments processed by retail merchants, only 23 percent are conducted electronically.[40]

From a gender perspective, all countries in the MENA region show that male usage of digital payments is higher than female usage. Perception, confidence and resistance to change as well as adequate regulatory environments that incentivize the use of digital solutions are some of the main reasons explaining the low adoption rate of digital payments in the MENA region.

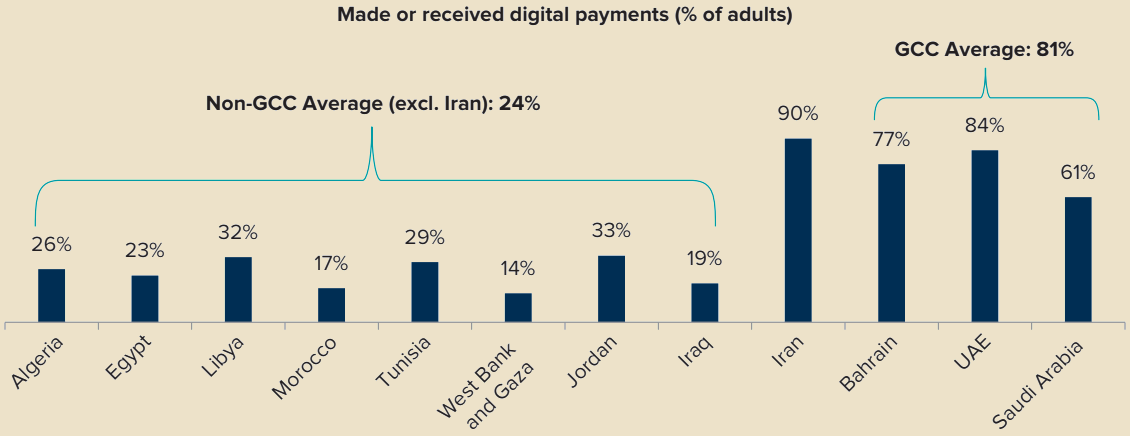
Although digital payments adoption remains low in most countries in the MENA region, there are several factors that serve as catalysts for the strong growth of digital payments in the future:[41]

- Large young population (60 percent are under the age of 25) that is tech savvy
- Nearly half of the countries in the region have unique mobile phone subscribership of 70 percent (global average is 66 percent)
- Average mobile Internet penetration of 50 percent
- High smartphone penetration (nearly 60 percent as of 2018) and expected to grow to 74 percent by 2025[42]
- Rapid adoption of e-commerce

Due to the favorable industry dynamics presented above and the population in MENA (especially GCC countries) having a high spending potential, the adoption of e-commerce is growing in the region. According to a 2018 survey by Analysis Mason, 62 percent of consumers in Morocco, Oman, Qatar, Saudi Arabia, and the United Arab Emirates shop online, a 15 percentage-point increase when compared to 2016.[43] The growing adoption of e-commerce

FIGURE 3.2

Digital Payments Use in the MENA Region—2017



Source: World Bank Global Findex.

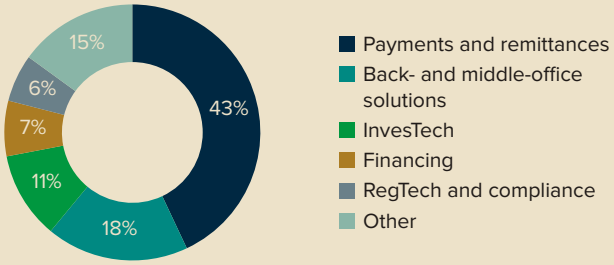
by the large young and tech savvy population offers the opportunity to speed up the adoption of digital payments in the region. The use of innovative payment solutions such as NFC and QR codes coupled with mobile wallets have gained wide acceptance, especially in the GCC countries. For instance, in the United Arab Emirates, Apple Pay and Samsung Pay have the second- and third-largest user bases of all mobile money services, respectively, even though they were only introduced in 2018. Similarly, more than 10,000 small retailers in the United Arab Emirates had adopted China's UnionPay QR code payment service as of October 2019.[44]

More than 40 percent of the FinTechs in MENA are focused on providing payment solutions and remittances, which is aiding in the digital payment adoption process. The majority of these FinTech payment companies are mostly developing business-to-business (B2B) solutions enabling bank services and card payments, such as merchant acquisition, payment aggregation, and e-commerce gateways. Figure 3.3 below provides a breakdown of the FinTechs in the MENA region by type of financial product/service offered.

Countries in the MENA region are realizing the importance of digital payments and some have adopted specific strategies to boost digital payments.[45] In Morocco, the country implemented a digital ID law in 2019, which will make it easier for the opening of transaction accounts and the use of digital payments. Additionally, the country launched a national mobile payment solution in 2018 that allows interoperability between bank and non-bank companies and is looking to develop a dedicated payment systems law. In Jordan, the development of digital payments infrastructure such as Jordan Mobile Payments (JoMoPay) and eFawateercom, as well as the establishment of Jordan Payments & Clearing Company (JoPACC) have put the country at the forefront of digital financial inclusion efforts in the region. Tunisia is finalizing the licensing framework for non-bank payment service providers and is looking at achieving full interoperability of payment infrastructures and services across banks and payment institutions.

FIGURE 3.3

FinTechs in the MENA Region by Type of Financial Product/Service



Source: CGAP Blog (October 29, 2019). Mapping Fintech Innovations in the Arab World

CASE STUDY: FAWRY (EGYPT)

Launched in 2010, Fawry is the largest digital payments network in Egypt, offering bill payment services and other services for consumers and businesses through more than 125,000 locations in 300 cities using multiple channels such as online, ATM, mobile wallets, and POS. For SMEs, the company provides collection services, customer acquisition, electronic cash, payment facilitation, and business-to-business (B2B) collection centers.[46] Fawry pioneered the electronic bill payment process in Egypt by aggregating all the types of bills into one channel to help simplify the process. Currently, the company processes more than 600 million transactions per year.[47] Fawry has also introduced innovative digital products to help SMEs obtain financing. For instance, in 2019 the company launched an electronic platform for merchants and consumer goods companies that allows electronic ordering of products by SME merchants from the consumer goods companies through the application.[48] The platform also assists in providing finance for merchants by studying the digital transaction data as it relates to sales per merchant and their needs.

Credit Scoring Based on Alternative Data/ Data Analytics

The use of alternative data such as mobile phone call records, utility and bill payments, digital payment transactions, social media, psychometric tests, industry/ sector data, and many others have become essential in the development of credit risk models to assess the willingness and ability of SME borrowers to pay. These new sources of data have become very useful when evaluating the credit risk of SMEs, which have few or none of the traditional sources of data, such as financial statements and cash flow records. As discussed previously, digital payments provide an indirect benefit to SMEs since their adoption can help build a digital footprint in the form of a payments data history that can then be used to assess SMEs' credit risk for a potential loan. Credit scoring models based on these alternative data sources are making it possible to provide loans to SMEs that did not have access to financing in the past. Credit scoring is also a major issue in many of the emerging countries that have no formal credit bureaus. Digital solutions can provide an opportunity for a public-private partnership to formally establish these bureaus. Such innovations should be consistent and comply with applicable consumer protection laws.

Most FinTechs and BigTech firms that offer digital lending products to SMEs have developed their own proprietary credit scoring models with an extensive amount of data points—in some cases, as many as 50,000 different data points. Banks are realizing the benefits of the alternative credit scoring models and are actively partnering with FinTechs that offer data analytics and credit risk assessments or that are developing their own models internally.

There are a variety of business models being used by FinTechs. These models may vary depending on the type of alternative data sources used to develop the credit scoring models, and on whether they provide loans themselves or are just purely a data analytics firm providing services to financial institutions.

Unintended side effects and risks related to the use of alternative data for credit scoring models include potential bias for discrimination when using AI/ML algorithms; opaqueness and challenges in explaining how the credit risk assessment was determined; and non-compliance with credit laws and regulations. Refer to Chapter 4 for more information on the challenges and risks related to the use of alternative data.

Digital Lending

Advances in technology make it possible to digitalize different types of credit products and be able to offer them to SMEs in a faster, more convenient, and sometimes cheaper way than through traditional methods. Using new credit risk models, alternative data sources, and digitized transaction data enables better data collection and credit assessments through the following ways:[50]

- Providing more data points to evaluate credit risk
- Using online transaction and ordering data that can act as proxies for cash flow
- Having online information of customer behavior
- Providing controls on how lending will be used by the SMEs

CASE STUDY: JUMO (SOUTH AFRICA)

Founded in South Africa in 2015, JUMO is a predictive technology platform that uses AI/ML and behavioral data derived from mobile usage to create financial identities for SMEs that do not have access to formal financial services, and to offer other financial products to the SMEs. JUMO partners with mobile network operators across Africa and South Asia to gain access to customers' data—the company analyzes more than 10,000 behavioral signals—to assess creditworthiness and offer real-time, customized loans and savings products to SMEs over their mobile phones. On one side of the platform, JUMO partners with mobile wallet operators to gain access to the customers as well as to their mobile data. On the other side of the platform, JUMO partners with financial institutions that provide financial products, such as loans and savings, to the customers. The company scaled up quickly, with more than 15 million unique SME customers across six countries in the continent and has disbursed over 1.6 billion in funding.[49]

Digital tools offer an improved method of making and collecting repayments from SMEs. For instance, a digital wallet improves the speed, ease and cost of collection of payments and there is no need to use a physical infrastructure. Other ways of collecting repayments via digital means are to automatically deduct them from receivables paid through digital channels.

The four major categories of digital lending products are summarized in Table 3.1 below.

TABLE 3.1

Main Categories of Digital Lending Products

Digital Lending Product	Description
Uncollateralized loans	Loans that are not secured by any type of capital that tend to be short to medium term in nature—from six months to three years, and that are used for working capital purposes
Payment card receivables	Also sometimes referred to as merchant cash advances (MCAs), it is a form of collateralized credit that provides an upfront advance of cash to a business with variable, short-term maturity dates, with payments typically deducted from the inflow of sales
Supply chain finance (SCF)	Secured financing such as invoice factoring, reverse factoring, and inventory financing where the loans are secured by collateral such as accounts receivable or inventory
Trade finance	Credit facilities for SMEs in order to guarantee the exchange of goods from one country to another

Two business models have emerged for the delivery of these types of digital lending products (Figure 3.5):

- **Online balance sheet**—refers to FinTechs, BigTech companies, or financial institutions that are providing digital lending products by using their own capital and holding the loans/debt instruments in their own balance sheets. Also, it includes partnerships between banks and FinTechs, where the FinTech serves as the distribution channel to the end customer (consumer, SME), while the bank provides the balance sheet. In addition, there are banks that have digital operations and provide digital lending products.
- **P2P/Marketplace platforms**[k]—refers to platforms that serve as intermediaries connecting borrowers (SMEs and retail customers) that need capital with investors that have capital to invest. The platform is mainly a matching mechanism, which evaluates the credit risk of the SME borrower to determine the appropriate interest rate to charge. Initially, borrowers and investors in the P2P/Marketplace lending platforms were individuals (hence the name Peer-to-Peer); however, over the years the business model has evolved whereby investors in most platforms are now banks and other financial institutions (asset managers, pension funds and others). In recognition of the shift in investor base, the market as a whole is no longer consisting of P2P, and thus the term "marketplace" has been added.[51] It is important that countries appropriately regulate P2P/Marketplace platforms to protect capital markets from fraud and money laundering/terrorist financing abuse. Please refer to Appendix A for more information on P2P/Marketplace lending.

There are challenges and risks that may hinder SMEs from using digital lending products. Due to the ease of applying and quick approval process for obtaining digital loans, combined with limited information about the digital loans, there is a risk of over-indebtedness. Additional challenges and risks include the rise of shadow banking, the lack of transparency in disclosures and lack of recourse mechanisms for SME borrowers, lack of credit information sharing and potential bias in the data used for credit risk assessment models that could lead to exclusion of specific type of SME borrowers. Chapter 4 provides an in-depth discussion of the challenges and risks of digital lending products.

Digital Lending Market—Overview of Business Models

The digital lending market volume for the G20 countries was estimated at $408 billion as of year-end 2017 and has been growing at a CAGR of 125 percent since 2014.[l] Out of the total digital lending volume, approximately 31 percent was for SME borrowers, while the rest were digital loans to consumers (Figure 3.4). Digital lending for SMEs has been mainly concentrated in three countries, generating 98 percent of the total volume: China (88 percent of the total), United Kingdom (3 percent of the total), and the United Stated (7 percent of the total).

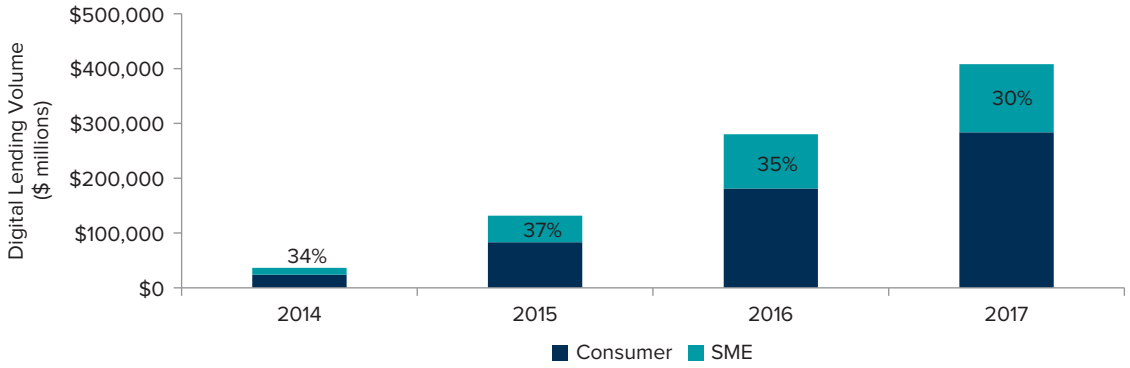
Approximately 88 percent of the total lending volume for SMEs in 2017 was from P2P/Marketplace platforms and the rest from online balance sheet (Figure 3.5). It is important to note that the data does not include digital lending volumes from BigTech firms and banks, so that may be a reason for the business model to be heavily skewed towards the P2P/Marketplace lending.

[k] Throughout the report, the terms "P2P/Marketplace platform lending" and "P2P/Marketplace lending" will be used interchangeably. Additionally, the term P2P/Marketplace platform lending in the report covers debt-based crowdfunding, which is a very similar business model.

[l] Digital lending volume data from Cambridge Centre for Alternative Finance (https://www.jbs.cam.ac.uk/faculty-research/centres/alternative-finance/). Please note that this data does not include digital lending volume from BigTech firms and other financial institutions such as banks.

FIGURE 3.4

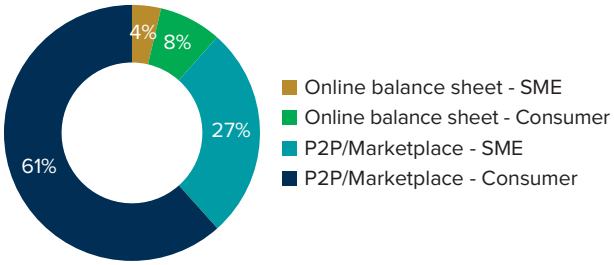
Digital Lending Volume Trends for G20 by Customer Type



Source: Cambridge Centre for Alternative Finance (CCAF).

FIGURE 3.5

Digital Lending Volume for G20 (2017)—By Business Model

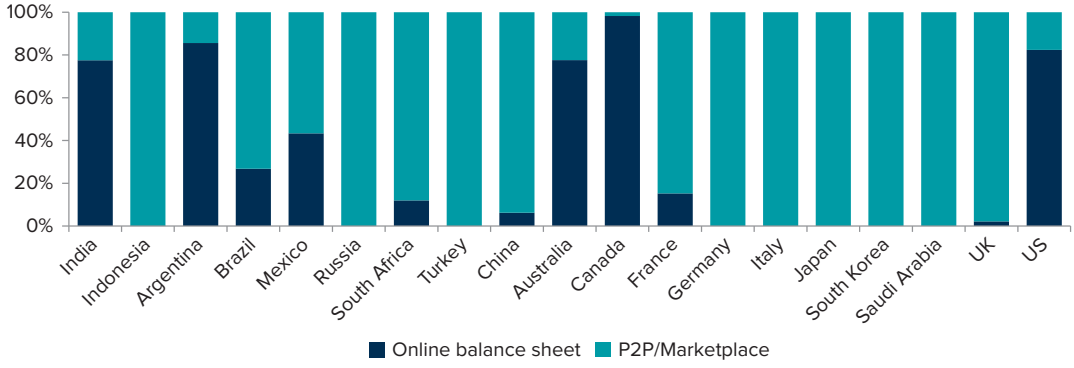


Source: Cambridge Centre for Alternative Finance (CCAF).

An analysis of the digital lending volumes by business model for each of the G20 countries shows that the P2P/Marketplace model is dominant in the high-income countries. In China and the United Kingdom, two countries that had the highest digital lending volumes, more than 90 percent of the volume was generated by P2P/Marketplace lending platforms. In 7 out of 10 high-income countries in the G20, the P2P/Marketplace platform business model is greater than 85 percent of the total digital lending volume (Figure 3.6). Only in the United

FIGURE 3.6

SME Digital Lending Volume (2017) by G20 Country



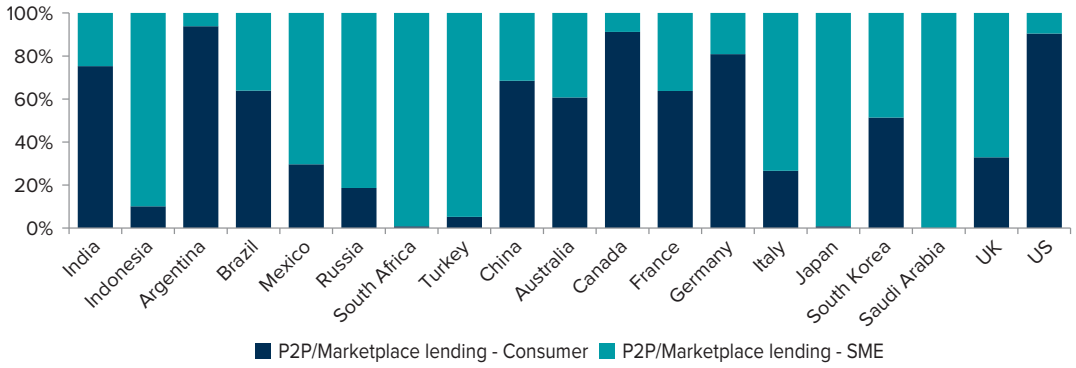
Source: Cambridge Centre for Alternative Finance (CCAF).

States, Australia, and Canada did the online balance sheet business model represent more than 80 percent of the total digital lending volume.

FinTechs have adopted the P2P/Marketplace platform model as one of the main ways to provide digital loans to SMEs. The main financial products offered through P2P platforms include uncollateralized loans and supply chain financing. Within the G20 countries, P2P/Marketplace lending platforms in high-income countries such as the United Kingdom, Saudi Arabia, Japan, and Italy are mostly focused on providing loans to SMEs as compared to consumers. In G20 upper- and lower-middle-income countries, P2P/Marketplace lending platforms in Indonesia, Mexico, South Africa, and Russia are mainly serving SMEs (Figure 3.7).

FIGURE 3.7

P2P/Marketplace Lending by Type of Borrower for G20 Countries—2017



Source: Cambridge Centre for Alternative Finance (CCAF).

CASE STUDY: FUNDING CIRCLE (UNITED KINGDOM)

Funding Circle is one of the largest global P2P/Marketplace lending platforms focused on SMEs. Founded in 2010 and based in the United Kingdom, the company leverages Big Data analytics to expertly match SMEs that need capital with a wide variety of investors, including individuals, banks, asset management companies, insurance firms, and national and supranational entities such as KfW and the European Investment Bank (EIB). As of the end of 2018, the company had lent $10.9 billion to over 75,000 small businesses and was supported by more than 90,000 investors. According to the company, small businesses used their loans in 2018 to create and sustain 115,000 jobs and supported a 6.5 billion GDP contribution across the United States, the United Kingdom, Germany, and the Netherlands.[52] The company has created a technology platform where SMEs can apply for a loan in 10 minutes with a turnaround time of 24 hours or less. The company reports that 35 percent of its SME borrowers are repeat customers of the company, and that 82 percent of customers surveyed said that in the future they would approach Funding Circle first for finance needs rather than use a bank.[53] Funding Circle is one of the first FinTechs to create asset-backed securities from the P2P/Marketplace loans.[54] The creation of these fixed income securities allows Funding Circle to further scale up its investor base capital available to lend to SMEs.

Uncollateralized Loans

As the name suggests, uncollateralized, or unsecured, digital loans refer to credit facilities that are supported by the owner's creditworthiness, rather than by any form of collateral. Advances in AI, ML, and Big Data analytics are making it possible to offer digital versions of uncollateralized loans to SMEs that may have had no access to these debt instruments in the past due to a lack of financial data on their businesses and to offer the loans at relatively low financing rates.

CASE STUDY: MYBANK (CHINA)

With a focus on serving SMEs and farmers, MYbank was established in June 2015 and was among the first batch of private digital commercial banks in China. Using an AI-powered risk-management system, which comprises of over 100 predictive models, 3,000 risk profiles and more than 100,000 metrics, MYbank calculates a line of credit for SMEs. So far, MYbank has loaned 2 trillion RMB ($290 billion) to nearly 16 million SMEs.[55] MYbank focuses on microentrepreneurs and small businesses without access to a bank loan in the past. According to a MYbank user survey conducted in 2019, more than 80 percent of MYbank's SME clients had never previously obtained a business loan from a bank and 52 percent of SMEs that borrow from MYbank have fewer than five employees and more than half are mom-and-pop-shops.[56]

Uncollateralized loans are offered via P2P/Marketplace and online balance sheet distribution channels, with more established FinTechs and BigTech companies offering these loans through the online balance sheet business model. Banks are also getting involved by partnering with FinTechs for the enhanced data analytics and credit risk assessment models, as well as the digitized collections and repayment methods. The partnership provides a win-win solution: banks can expand their customer base in a profitable manner, while FinTechs can target banks as customers, which is a better value proposition than providing loans directly to customers. In addition, banks with strong online presence are also offering digital loans to SMEs, using a combination of traditional and alternative data for credit risk assessment.

Payment Card Receivables Financing

Credit card receivables financing, also known as merchant cash advances (MCAs) or cash advance loans, emerged as a solution for small businesses that needed cash on a short-term basis but were not able to get a loan from a bank. The payment card receivables provider advances an upfront sum of cash to the SME in exchange for a percentage of the company's future credit and debit card sales. When an SME gets a payment card receivables financing, it negotiates with the provider the fixed percentage that they will take from the business' credit and debit card sales every day.

Payment card receivables financing provides many benefits for SMEs looking to quickly access financing:

CASE STUDY: KABBAGE (UNITED STATES)

Kabbage is one of the largest online SME lenders in the United States, with a market valuation of over $1.2 billion. The company has provided more than $8 billion in capital to more than 200,000 small and medium businesses throughout the United States.[57] The company offers short-term loans to SMEs, which includes payment card receivables financing as well as custom loans that range from three to 45 days, and SMEs have the flexibility to pay in the way they prefer—they can either pay the full amount at the end of term period, or can split the payment by using a portion of the business' revenue coming in from invoices. SME loans are approved in 10 minutes, while it typically takes at least three weeks for banks to approve a loan. To accomplish this, Kabbage uses AI to crunch a wide variety of data points that they can obtain from the small business through their digital payment transactions and bank accounts. The company has been successful in building long term relationships with small businesses; on average, Kabbage customers take out 19 to 20 loans over a five-year period versus 2.2 loans for a traditional bank.

- **Scalable and flexible form of financing.** Due to the variable payment mechanism, during busier periods of time when a business is making more money, more of the credit card receivables financing will be automatically paid back, while in leaner times it will not pay much.
- **High approval rates within as little as 24 hours.** Since payments are tied to a portion of sales, it is fairly straightforward and certain to obtain payments. Therefore, even businesses with low credit ratings may get approved.
- **No hidden charges, easy and highly transparent process.** SMEs do not need to provide security or a business plan in order to obtain an MCA.

Digital technologies have played an essential role in the development and significant growth of payment card receivables financing worldwide. For SMEs that receive digital payments from customers, a digital track record is created that can then be used for credit assessment and collect repayment. Once the credit assessment is made, FinTechs can provide the capital directly to the SME via a digital wallet. For the loan repayment, the FinTech takes automatic deductions from future sales through the automated clearing house (ACH) system.

Supply Chain Finance

Supply chain finance (SCF) solutions provide a range of financial products designed to optimize working capital and liquidity for buyers and suppliers. There are two types of SCF solutions (Table 3.2):[58]

Due to advances in technology, SMEs have been able to access SCF solutions as another source of finance, which in the past were only available to multinational companies and large enterprises. The platform-based business model offered by some FinTechs helps to connect an SME that has invoices they wish to sell with multiple buyers interested in the invoices such as financial institutions and individuals. Additionally, SMEs can use digital tools, such as accounting software to record, manage and track invoices, reducing the cost through which financial institutions can view and assess the invoices. By using these tools, the accounts receivables of the SMEs become more standardized documents that can be more easily priced, financed, and traded by financial institutions and FinTechs. Another trend is the entry of online retailers, such as Amazon and Alibaba, offering invoice financing to merchants in their e-commerce platform and evaluating the SME's credit risk based on the digital sales

TABLE 3.2

Types of Supply Chain Finance Solutions

Supply Chain Finance Solution	Description	Examples
Supplier-led	Any technique in which the supplier can sell its receivables to a receivables finance provider, who buys the receivable at a discount to face value in return for taking on the risk of potential default by the buyer.	Factoring, invoice discounting, inventory financing
Buyer-led	Any technique in which the buyer's payables are used as collateral in a financing arrangement. In this situation, a financial institution can extend financing to the supplier issuing an invoice to the buyer once the buyer has gained comfort that the goods and services meet the order specification. In general, the buyer in these transactions are large corporations with low cost of capital. Since the financial institution prices the credit facility against the risk of the larger and higher-rated buyer, the suppliers are financed at a lower cost than they can achieve on their own	Reverse factoring, dynamic discounting

CASE STUDY: eFACTOR NETWORK (MEXICO)

Founded 10 years ago, e-Factor Network is a Mexico-based platform that enables electronic factoring services for SMEs that wish to sell their accounts receivable. The company operates the largest receivables factoring marketplace in Mexico, with more than 10,000 participants and operations with suppliers located in 20 countries across North America, Europe, South America, and Asia. 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.

CASE STUDY: SMART ESCROW (SPAIN)

Founded in 2019, Smart Escrow has developed a unique business model that finances purchase orders of small businesses as well as suppliers of large fast-moving consumer goods (FMCG). The company provides a more secure way for banks to lend to SMEs by placing funds in an escrow account and delivering funds to the SMEs in phases when certain milestones are achieved. The combination of an escrow account and the electronic data exchange (EDI) information enables Smart Escrow to have a clear idea of the financing needs of the supplier being financed and to be able to anticipate the operation's potential problems. The traceability and payment by phases provided by the Smart Escrow platform provides security to financial institutions when anticipating the financing needs of suppliers. The company so far has financed 70 SMEs for a total of $1.4 million.

and payments made through the platform. This invoice financing approach initially started in developed markets and is quickly migrating to developing countries.

Electronic invoices (e-invoices) are an important component in the supply chain finance process, providing significant benefits to SMEs and its suppliers. The digitization of invoices significantly reduces the cost of generating the invoices, as well as the time to process them. A survey conducted in Europe estimates that processing costs can be lowered by more than 95 percent, from €7 for the processing of a paper invoice down to €0.30 for e-invoices.[59] E-invoicing results in increased productivity and automation since data is sent directly from the buyer to the SME's accounting system, eliminating the need for manual data re-entry. In addition, a fast and efficient payment method can help SMEs strengthen the relationship with its suppliers. Another advantage of using e-invoices is the simplification of account reconciliation. Many jurisdictions around the world have introduced regulation related to electronic invoices. Refer to Section 3.2 for more information on e-invoicing regulations.

Trade Finance

Trade financing refers to financial institutions providing credit facilities in order to guarantee the exchange of goods from one country to another. Trade finance is a highly complex business process involving many intermediaries between buyers and sellers of goods. These parties coordinate transactions across several currencies, custom regimes, laws and regulations. There is also extensive paperwork and the use of due diligence and compliance processes, with multiple financial institutions involved in the verification of goods through various stages of a transaction. It is estimated that there is a global trade finance gap of $1.5 billion, with SMEs being the hardest hit, representing 74 percent of total rejections for trade financing requests.[60] **Notably, women-owned SMEs were 2.5 times more likely to have 100 percent of their proposals rejected by banks than were male-owned SMEs**.[61] Study findings reveal that one of the main reasons that financial institutions are reluctant to provide trade finance to small businesses is due to the high cost and complexity of undertaking anti-money laundering due diligence. The archaic and paper-based documentation in trade finance also leads to high costs, making it harder for SMEs to obtain access to this type of financing. **FinTechs and digitalization can be a solution to the lack of trade financing for SMEs, since it can help automate processes, reduce complexities, and reduce costs.** In particular, transforming paper-based documentation into electronic formats can reduce processing times and the cost of cross-border movements of goods.

Blockchain/DLT could play a major role in reducing the worldwide trade finance gap.[62] Trade finance products are being made more efficient due to transparency, smart contracts, and the consensus mechanisms that replace multiple instances of verification and checking. Blockchain/DLT allows real-time review of financial documents and bills of lading, helping to reduce counterparty risk. Moreover, contract terms could be executed via smart contracts, eliminating the need for correspondent banks and additional transaction fees. Another benefit of blockchain/DLT is that it could give every party in a trade finance deal access to a single record of the transaction, providing transparency to all parties on what exactly is happening at every step of the transaction. Using a common digital platform to track trade finance deals creates a data pool about potential clients and their transaction histories, which could make it easier for FinTechs to offer financing options.

CASE STUDY: MODIFI (GERMANY)

Founded in Germany in 2018, Modifi helps SMEs obtain access to finance for trade transactions across borders by using technology and a global ecosystem of trade partners. Modifi facilitates uncollateralized SME loans in the range of $5,000 to $75,000. Its system only takes 10 minutes for a customer to apply online and obtain approval within 48 hours, as compared to a duration of 1 month or more at traditional banks. Partnerships are crucial for the success of Modifi and the company has built partnerships with shipping and logistics firms globally—Maersk is a major investor and partner. So far, Modifi has financed more than $400 million worth of trade finance in the European market, and it is now targeting the Indian market where it expects to achieve $1 billion in loan volumes in the next three years.

Digital Insurance

InsurTech, or the provision of insurance products and services using technology and innovative business models, can enable access to finance for SMEs. By using cloud computing, AI/ML, Big Data analytics, IoT, and in some cases blockchain/DLT, InsurTech companies develop customized insurance products for SMEs and consumers. Technology innovations make it easier and faster to apply for insurance, as well as process claims and collect premiums. In addition, the use of IoT and biometrics, together with the analysis of vast amounts of alternative data using Big Data analytics and AI, allows InsurTech companies and insurance firms to develop highly customized insurance solutions, as well as new business models such as pay-as-you-go insurance that cover for certain events or only when a certain product or service is used. It is estimated that the size of the insurance market for small businesses is approximately $200 billion globally, representing an attractive area for insurance companies to focus on since a large portion of SMEs are under-insured.

Products offered by InsurTech companies such as trade credit insurance as well as agricultural insurance can provide significant benefits and help close the finance gap for SMEs. Trade credit insurance protects the account receivables of SMEs (sellers) from loss due to credit risks such as default, insolvency or bankruptcy from commercial trade buyers. By purchasing trade credit insurance, SMEs can enhance their attractiveness to potential lenders by securing their collateral. This, in turn, can open up access to financing for SMEs from commercial banks. In the agriculture sector, crop and/or shipment insurance can also enhance access to finance for small business farmers that use these products as banks are more willing to lend and interest rates are likely to be lower when agribusinesses have credible insurance policies. Without insurance, the business of agriculture is very risky, and farmers and enterprises are less likely to invest and grow.

Equity Crowdfunding

Equity crowdfunding refers to raising capital for an SME or startup by using an online platform and asking investors to each invest a relatively small amount in it. The benefit of equity-based crowdfunding for SMEs is the ability to raise capital through an alternative channel—which may

CASE STUDY: CREDABLE (SWEDEN)

Credable is a Swedish-based InsurTech founded in 2018, and part of Euler Hermes, a global insurance firm. A fully digital platform, Credable offers SMEs trade credit insurance solutions that are “on demand”, or when needed to cover for specific invoices. The company measures the credit rating of the SME’s potential customer using proprietary algorithms and automatically provides a quote for insurance coverage of an invoice. By digitalizing the insurance, the product becomes more accessible and easier to purchase. Another important innovation offered by Credable is the ability to offer on-demand insurance as an alternative to factoring and invoice financing.

be easier and cheaper than using venture capital and private equity firms. The FinTechs that offer investment crowdfunding platforms differ from P2P/Marketplace lending platforms because the underlying financial product is equity ownership in the company that is raising capital. The objective of the FinTech startup offering the equity-based crowdfunding platform is to provide transparent information to the investors so that they can evaluate the potential investment opportunity. Like P2P/Marketplace lending business models, investors can make investments in multiple companies through equity-based crowdfunding, thereby diversifying their risk. For retail investors, equity crowdfunding allows them to invest in startups and private companies that they were unable to do so before, since it was mainly the realm of VC and private equity funds. Unlike P2P/Marketplace lending, investors also have the possibility to generate significant returns if they bet on a new startup that becomes the next market leader. For SMEs and startups raising capital, equity crowdfunding offers a few additional benefits, such as:

- **Limited liability.** In the event of a default or bankruptcy, the startup is not saddled with unlimited liability for unpaid debts, and instead the investors take a hit alongside the startup founders.

- **Global reach.** Equity crowdfunding allows access to investors globally; this is particularly relevant in countries with underdeveloped capital markets

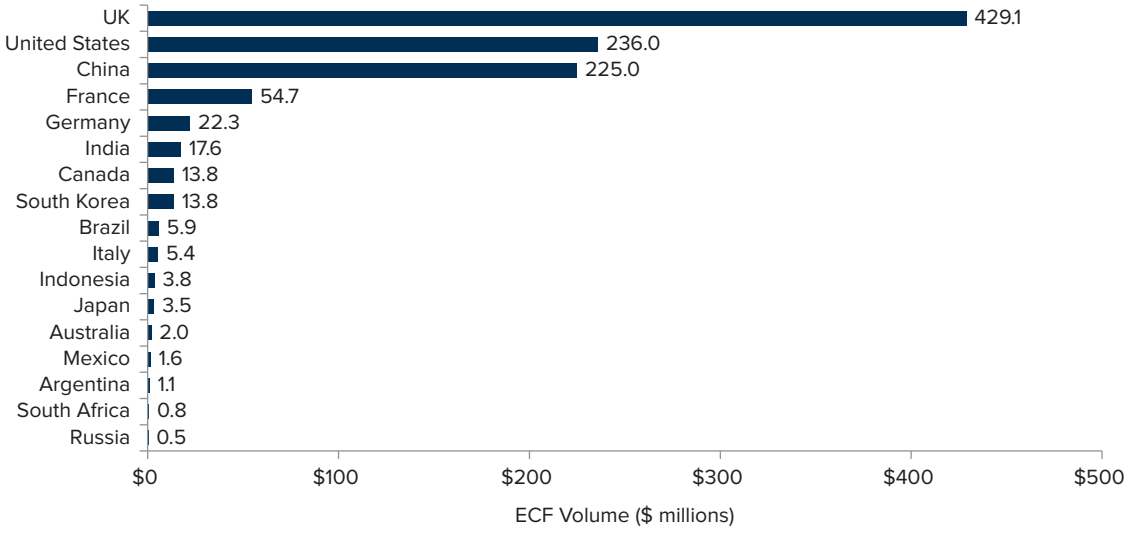
It is important that countries appropriately regulate equity crowd funding to protect market integrity and prevent money laundering and terrorist financing abuse.

The equity crowdfunding market has demonstrated strong growth over the last 5 years, but the total capital raised represents a small fraction of the total digital lending volume. In 2017, the total equity crowdfunding volume in the G20 was approximately $1 billion, whereas the total digital lending volume was $409 billion. The top three countries with the highest volume of equity crowdfunding are the United Kingdom, the United States, and China, which represent more than 85 percent of the total volume (Figure 3.8). The United Kingdom has by far the largest volume at 41 percent of the total. (See Box 3.2 for an analysis of digital lending and equity crowdfunding in the MENA region). The adoption rate of equity crowdfunding in a country seems to be contingent on the presence of an adequate regulatory environment.

Some of the challenges related to the lower adoption rate of equity crowdfunding include highly restrictive regulations that require equity crowdfunding platforms to follow securities registration for any offering done through their platforms; and providing clear and transparent investor protection provisions. Finally, equity crowdfunding shares can be difficult to resell since in a lot of jurisdictions there is no established secondary market for such shares. Refer to Chapter 4 for more information on the challenges and risks.

FIGURE 3.8

Equity Crowdfunding Volume (2017) by Country—G20[m]



Source: Cambridge Centre for Alternative Finance (CCAF).

[m] In Turkey, the Communiqué III-35/A.1 on Equity Based Crowdfunding has been enacted on 3 October 2019.

CASE STUDY: WISEED (FRANCE)

Founded in France in 2008, WiSEED is an equity crowdfunding platform that allows SMEs as well as startups to raise equity capital from a wide variety of investors. Individuals can invest as little as 100 EUR into any of the active fundraising projects, allowing them to diversify their risk. One of the company's unique value propositions is that it enables individuals to invest in sectors that were only accessible in the past to institutional investors and high net worth individuals. The sectors include biotech, real estate, social enterprises, renewable energy, and agriculture. Unlike other equity crowdfunding platforms that mainly focus on equity investment for startups, WiSEED provides investment for a wide variety of small businesses in the real sector. Currently, WiSEED has more than 135,000 individual investors, with 507 projects funded for a total amount of 124 million EUR.[63] The company is regulated by the French Prudential Supervision and Resolution Authority (ACPR).

BOX 3.2

Digital Lending and Equity Crowdfunding

SPOTLIGHT ON THE MENA REGION

Digital lending and equity crowdfunding for SMEs are still nascent in the MENA region, with most of the activity driven by P2P lending platforms on the digital lending area. Currently, there are limited resources for tracking digital lending and equity crowdfunding volumes in the region, so it is difficult to get an accurate view of the growth and trends over the last few years. As mentioned previously, 85 percent of the DFS solutions in the MENA region are offered by FinTechs, with the rest being offered by BigTech firms, banks and MNOs. According to CGAP, financing, which includes digital lending and equity crowdfunding, only represents 7 percent of the DFS solutions offered by FinTechs.[64]

Digital lending volumes have been growing at an exponential rate in the MENA region, growing from $17 million in 2014 to $214 million in 2017. Most of the digital lending volume is targeted for consumers, with only 17 percent targeted for SMEs as of 2017 (Figure 3.9). To put this in perspective when compared to G20 lending volumes, the MENA region digital lending volume represents 0.05 percent of the total volume from the G20 countries.

The P2P/Marketplace business model is the main one adopted by FinTechs in the region. It is important to note that the Cambridge Centre for Alternative Finance (CCAF) volume information does not include digital lending activities from BigTechs and banks, which may result in underestimating the total actual figures. When looking at the digital lending volumes by country, the countries with the largest volume in 2017 were the United Arab Emirates, Jordan, Lebanon, and Palestine (Figure 3.10). The United Arab Emirates and Jordan are the main countries where digital lending is mostly focused on serving SMEs (Figure 3.11).

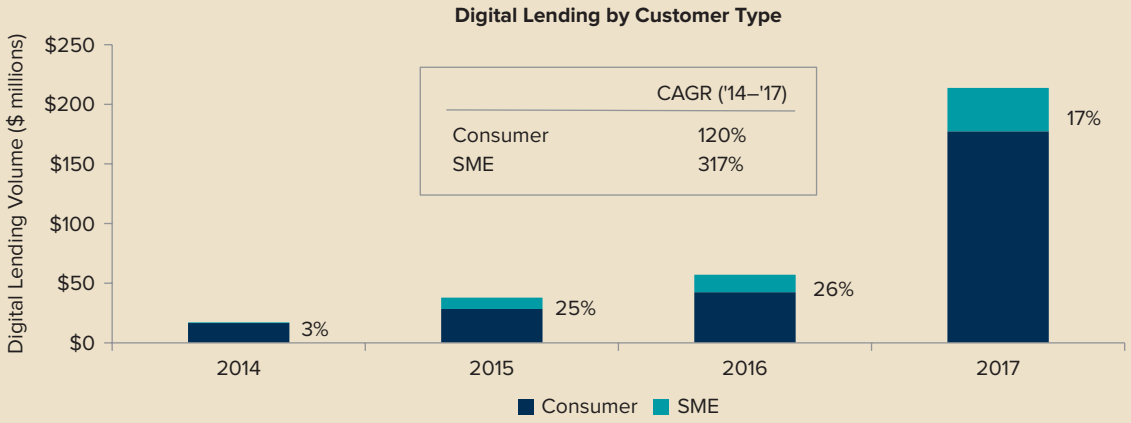
Equity crowdfunding volume in the MENA region was approximately $125 million as of 2017, with only a limited number of early stage FinTech platforms in the United Arab Emirates and Jordan offering this product. As FinTech and other technology startups continue to emerge, the need for alternative sources of capital such as equity crowdfunding will gain more popularity and acceptance.

CASE STUDY: LIWWA (JORDAN)

Liwwa is a P2P/Marketplace lending platform based in Jordan that mainly provides loans to SMEs. Founded in 2013, the company started operations in 2015 and mainly provides working capital and trade finance loans of up to $100,000 to SMEs in Jordan and Egypt. Liwwa's business model relies on retail investors as the main source of capital for the platform, and currently offers returns of 9.2 percent to 16.1 percent to investors. Since its launch, the company has provided $40 million in debt to qualifying SMEs, with most of its loans being short term in nature—less than 1-year maturity. Using its proprietary credit model and Big Data analytics, Liwwa has been able to maintain a relatively low NPL ratio of 2.7 percent.[65] The company differentiates itself from other P2P lending platforms by being one of the few firms to offer sharia-compliant loans. In 2017, the company analyzed the economic impact of the $4.6 million it had lent to Jordanian SMEs during the year and estimated that the amount lent was able to support 308 jobs and generate almost $9 million in output in the Jordanian economy.[66]

FIGURE 3.9

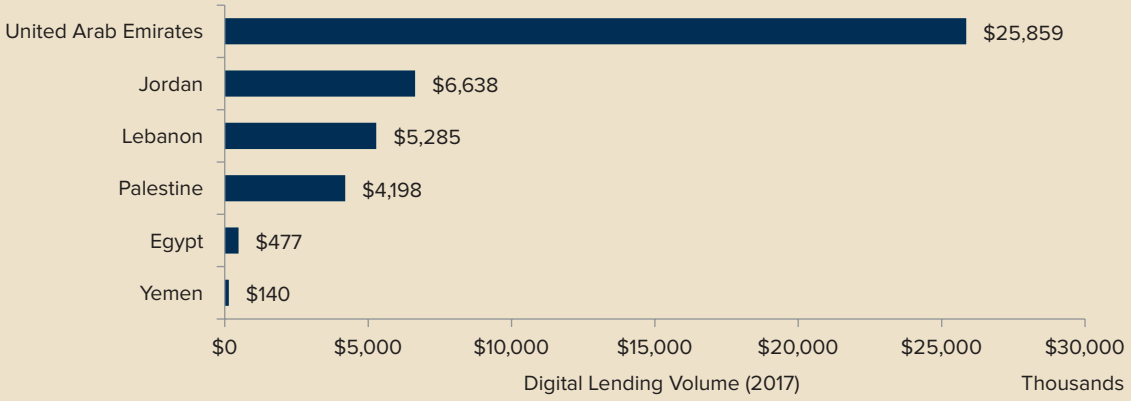
Digital Lending Volume—MENA



Source: Cambridge Centre for Alternative Finance (CCAF).

FIGURE 3.10

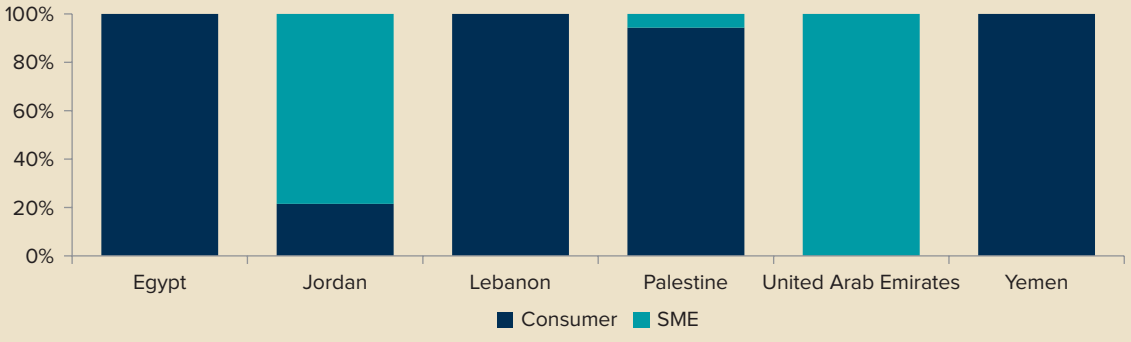
Digital Lending Volume (2017) by Country—MENA



Source: Cambridge Centre for Alternative Finance (CCAF).

FIGURE 3.11

Digital Lending Volume (2017) by Country and Customer Type—MENA



Source: Cambridge Centre for Alternative Finance (CCAF).

Digitalization of SMEs

The digital transformation, or digitalization, of SMEs refers to the adoption of new business models, such as e-commerce, and of digital products, such as software solutions, electronic communication tools (e-mail, social media, mobile phones), and other advanced systems (AI, robotics, 3D printing) that are used to run every aspect of a company's operations. In most cases, the use of technology requires significant changes in business processes such as how the company manufactures and distributes products, as well as how it interacts with customers and suppliers. **The rapid advances in technology are making it possible for SMEs to easily adopt these digital tools that can lead to increased productivity, and profitability, and a more level playing field when competing against larger companies**.

Figure 3.12 summarizes numerous potential benefits that SMEs can gain from the adoption of digital technologies.[67] The digital transition allows SMEs to improve market intelligence, reach scale without mass, and enhance their competitiveness in local and global markets through improved product/service innovation and improved production processes. A study conducted by IDC covering more than 3,200 SME CEOs from 11 different countries found that 49 percent of the CEOs believe that technology levels the playing field for small businesses versus larger corporations.[68] From a macroeconomic perspective, the digitalization of SMEs can also enhance a country's economic activity. It is estimated that the digitalization of SMEs in the ASEAN region could add $1.1 trillion of GDP value across the region by 2025.[69] (See Box 3.3 for an analysis of digital transformation in the MENA region.)

Cloud computing plays a crucial role in the digitalization of SMEs. One obstacle that has hindered the adoption of digital tools by SMEs has been the significant amount of resources needed to invest in IT infrastructure and digital technologies. However, cloud computing has made it possible for SMEs to outsource all or most of their IT infrastructure needs, allowing many enterprises to be "IT asset light". Moreover, companies are now using cloud computing to offer software solutions to SMEs (Figure 3.13) that do not require any software installation costs—only access to the Internet—and are paid via a subscription fee. Indeed, the software-as-a-service (SaaS) model used by different providers is making it possible for SMEs to use high-end software to manage all parts of their business without any significant investment.

A wide variety of Big Data analytics software providers has emerged in each of these categories, developing solutions specifically targeted for SMEs. In some cases, providers offer a combination of these tools into one solution for SMEs, such as ERP software. Most of these software solutions can easily integrate with external bank accounts as well as other software applications, making it easy and convenient for business owners to use. Most of these providers are based in G20 high-income countries, but the software tools are designed to be used globally by supporting different languages and country/region-specific requirements. More recently, software providers are starting to emerge in developing countries in

FIGURE 3.12

Benefits for SMEs on the Adoption of Digital Technologies

Greater access to markets and customers	The Internet allows companies to access markets globally at a relatively low cost, enabling them to reach scale. Online marketing tools are also helpful to better target customers
Lower operational costs and higher productivity	By using digital tools, SMEs can run their operations more efficiently, and in some cases, with less staff. Moreover, the adoption of cloud computing can result in lower infrastructure costs. Productivity can also be enhanced by automating different processes
Increased access to financing	The Internet is an increasingly important source of financing for companies. Equity crowdfunding and FinTech startups offering digital lending products have emerged over the past few years giving entrepreneurs more options to obtain funding
Better collaboration and communication	The Internet provides extensive opportunities for SMEs to collaborate with others in ways that were not possible before due to a lack of time, resources or connections. The use of social media applications make it possible to have a more direct communication with customers and collaborate with others in real-time

FIGURE 3.13

Software Tools and Solutions for SMEs

Accounting / Invoicing	Customer Relationship Management (CRM)	Supply Chain Management (SCM)	Human Resources (HR)	Enterprise Resource Planning (ERP)
• Used to keep track of sales, invoices, payments and accounting of transactions • Help SMEs automatically create financial statements and connect directly with bank accounts	• Used to facilitate the interaction of firms with customers by centralizing and tracking all customer related information, such as contact data, purchase patterns, and history of contacts	• Used for executing and controlling transactions and managing inventory, logistics, and supplier relationships	• Used to manage company payroll, benefits and keep track of employee performance	• Software used to manage and integrate the main business activities of a company in one centralized database: accounting, finance, procument, inventory, and HR

order to best address local and cultural issues. It is important to note that the early adoption of digital tools and software solutions by SMEs is correlated with the education level and technology knowledge of business owners. Please refer to Appendix B for more information on the adoption of digital tools and software solutions among SMEs.

Big Data analytics can help transform how businesses operate by enabling them to gather accurate information about customers, competitors, and suppliers, and to use this information to make strategic decisions.[70] Most of the software solutions mentioned above embed data analytics within their functions, to provide an end-to-end service to gather, store, and perform a first analysis of the data. Importantly, some of the digital transaction data generated from these software solutions are very useful for FinTechs, BigTech companies, and banks to leverage in providing access to finance for SMEs. In addition, Big Data analytics enables the use of AI and ML, which in the past were out of reach for most SMEs due to the large investments required in technology, skills and data management. Thanks to cloud computing, SMEs can access AI and ML services even without having the internal resources to develop them.

While the digital transformation of SMEs can allow businesses to operate more efficiently with less staff, there is a potential economic downside such as employment reduction since existing staff may not be well trained to operate with new digital technologies and processes. Another potential risk is that the digitalization of SMEs may enhance inequalities, especially for microenterprises and SMEs from vulnerable and underserved groups that may not have the resources to digitalize their operations.

CASE STUDY: XERO (NEW ZEALAND / AUSTRALIA)

Xero is one the leading cloud-based accounting software platforms for SMEs. Founded in 2006, the company is publicly listed in the Australia Stock Exchange (ASX), and has a presence in New Zealand, Australia, the United States, the United Kingdom, Hong Kong, SAR (China), South Africa, and Singapore. Xero is currently used in more than 180 different countries worldwide,[71] with a customer base of 2.1 million SMEs.[72] The company's software allows SMEs to gain better visibility into the accounting and bookkeeping of their businesses so that they can manage cash flows. The company has more than 200 secure connections with banks and financial partners around the world, allowing subscribers to securely and quickly share accounting data to enable an instant lending decision.

BOX 3.3

Digitalization of SMEs

SPOTLIGHT ON THE MENA REGION

The digitalization of SMEs in the MENA region is still in its early stages, with strong adoption growth expected in the next few years. However, the use of digital tools by consumers is high and growing rapidly, where in the United Arab Emirates more than 70 percent of the population has a smartphone, and where the use of social media is widespread. As an example, the MENA region is ranked second in the world by number of daily YouTube video views at more than 300 million (Figure 3.14).[73] Indeed, the young, tech-savvy demographics of the region will indirectly affect the adoption of digital technologies in small and large businesses.

There are a few factors that demonstrate the strong momentum for the digitalization of SMEs in the near future. Businesses are seeing the benefits of digitalization and more internal processes and customer journeys are being digitized. By 2022, it is expected that MENA will have the world's largest cloud traffic growth rate, at 41 percent.[74] Moreover, there has been a 150-fold increase in cross-border data flows over the last decade connecting the Middle East to the world.[75] These data flows are an important indicator of the adoption of digital technologies. Internet penetration rate is at an average of 56 percent in the region, reaching 90 percent in certain GCC countries. Since SMEs represent an important engine for growth for many of the countries in the region, many believe that digital transformation is the key to survival and growth of SMEs. In fact, based on past surveys of SMEs in the MENA region, four in ten of small business owners consider the digitizing their business operations as critical for revenue growth.[76] For companies that have invested in cloud computing, Big Data analytics, and mobility, the survey shows that these businesses enjoy 50 percent faster growth when compared to competitors that did not make these investments.[77]

CASE STUDY: MIZA (UNITED ARAB EMIRATES)[78]

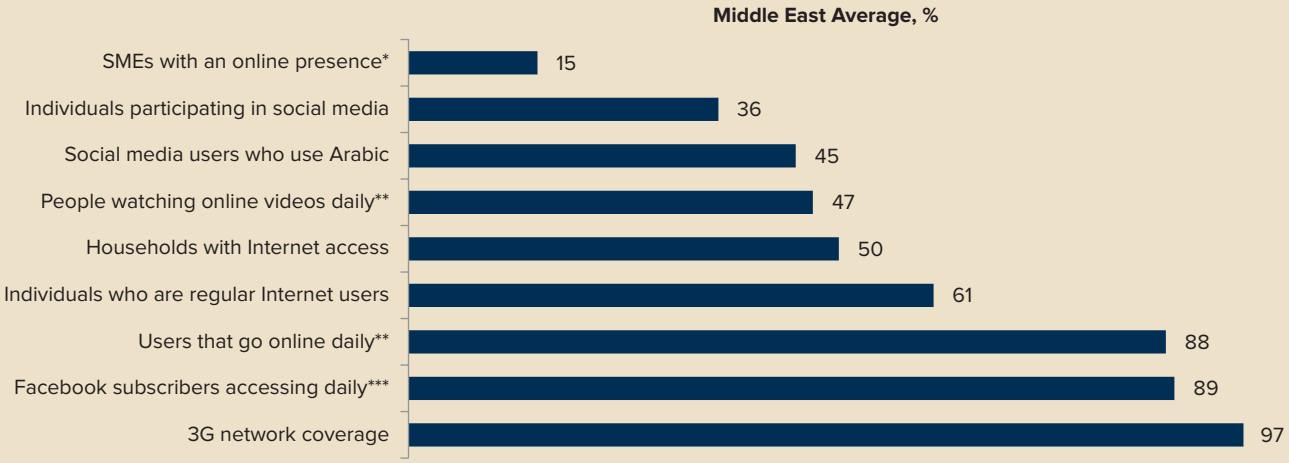
MIZA is a digital payments company providing end-to-end solutions using different payment channels such as POS terminals and mobile money. The company is focused on helping SMEs to digitally transform their businesses so that they can become financially included and access credit lines from banks. Recently, MIZA partnered with Expertise France and BNP Sahara Bank to build a pilot project that helps SMEs digitally transform from a traditional retail store model to a digital mini-mart concept. BNP Sahara Bank provided a credit facility to finance the working capital of 30 SMEs over a 24-month period to achieve the following:

- Digitalize their stores and thus enhance their operational efficiency
- Leverage the credit facility to free up their balance sheet to invest in advancing capacity to their clients
- Consolidate procurement and use e-commerce and e-logistics companies to improve their orders

MIZA's role is to develop a platform consisting of a mini-ERP system, a digital payments solution, and a procurement module to support SMEs in their digital transformation journey. Through the deployment and adoption of this platform by the retail stores, it is expected that it will enable the stores to have better access to credit since the transactions will be online and provide more visibility to financial institutions.

FIGURE 3.14

MENA Region Percentage of Usage of Different Digital Technologies



Source: Networked Readlines Index 2015, World Economic Forum; *2016 Digital Yearbook*, We Are Social; Digital Adoption Index, World Bank; *The Connected Consumers Survey 2015*, Google; McKinsey analysis.

* Saudi Arabia only.

** Google Consumer Barometer 2015 for the United Arab emirates and Saudi Arabia only.

*** Middle east, North Africa, and Levant, based on Arab Social Media Report 2015, launched at Arab Social Media Influencers Summit 2015.

There are a few challenges/risks related to the digitalization of SMEs such as the lack of digital literacy by the business owners, shortage of skilled talent and potential loss of employment to digitalization. Re-skilling and training of the workforce on the use of digital technologies could be one way to address these challenges. Please refer to Chapter 4 for a more detailed discussion of the challenges and risks.

Market Enablers

To complement the advances in technology, three market enablers have impacted how SMEs access digital financial products and digitally transform their businesses: (i) the sharing economy; (ii) e-commerce; and (iii) digital banking.

The Sharing Economy

The sharing economy, or also known as the collaborative economy or "gig" economy, is defined as activities facilitated by digital platforms that create an open marketplace for the temporary usage of goods and services provided by individuals and/or businesses.[79] The definition encompasses the digital platforms in transportation (that is ride-hailing such as Uber, Lyft, Careem, Grab, Go-Jek, and so forth), accommodation (for instance, Airbnb), food delivery, and many other areas; however, it excludes other parts of the platform economy such as e-commerce and social networking. The concept of the sharing economy is derived from the notion that mutual parties (consumers, businesses) can share value from an under-utilized asset or skill. This value exchange takes place through a shared marketplace, a collaborative platform, or a peer-to-peer application.

The sharing economy has expanded rapidly to all parts of the world, including emerging markets. In 2016, PricewaterhouseCoopers (PwC) estimated that the sharing economy revenues were expected to grow at 25 percent annually over the next decade, to reach $335 billion by 2025.[80] More than 65 percent of the sharing economy revenue will come from North America and Western Europe. There are close to 10,000 companies in the sharing economy operating in 133 countries and 25 categories.[81] The growth of the sharing economy in emerging markets is strong, especially in the Asia Pacific region. In China, the State Information Center expects that the sharing economy will grow by 40 percent per year over the coming years and reach 20 percent of GDP by 2025.[82] Table 3.3 outlines three ways that SMEs participate in the sharing economy. (See Box 3.4 for a discussion of the sharing economy in MENA).

While the sharing economy began almost exclusively as a consumer-focused offering, it has been expanding to bring a wealth of opportunities to the Business-to-Business (B2B) space. A recent survey showed that nearly 70 percent of SMEs use some aspect of the sharing economy at least once a month, and 26 percent of them take advantage of these services daily.[83] The B2B sharing economy encompasses a wide range of services, from office space, cloud-based services, and leasing/rental of assets, to freelance workers. Ultimately, the B2B sharing economy can bring many benefits to SMEs, such as:

- Lower production costs
- Providing more flexibility in responding to the needs and expectations of customers
- Making filling more complex orders more flexible and cheaper than before
- Including suppliers and customers in the production process, sales, and distribution

TABLE 3.3

How SMEs Participate in the Sharing Economy

	Description	Examples
Inputs through the Sharing Economy Platform	SMEs can tap on platforms that offer professional services in order to outsource part of their operations. By using these services, SMEs gain flexibility in their operations and reduce overhead costs	SMEs may use the digital services of companies that rent equipment such as forklifts, tractors, and many others.
Selling through the Sharing Economy Platform	Digital platforms often seek out potential opportunities to partner with SMEs and play an important enabling role in the digital transformation of SMEs. Indeed, by partnering with the digital platforms, SMEs need to digitalize their operations in order to form part of the digital platform marketplace. Key benefits for SMEs include wider customer reach, cost reduction and optimized operations	Restaurants can deliver food through GoJek, a ride-hailing platform in Indonesia that has expanded to food delivery, instead of hiring their own delivery team
Creating your own Sharing Economy Platform	Developments in technology such as cloud computing, Big Data analytics and AI/ML are making it possible for even small businesses to start a digital platform. It is no longer about economies of scale because the overhead costs on these platforms are relatively small.	Airbnb, Uber, and so forth all started as small businesses. Given the proliferation of sharing economy platforms, it is harder to create your own.

Some of the key challenges and risks related to the sharing economy include potential fraud and misconduct by the sharing economy platforms, potential data privacy/data protection issues, and the crowding out of incumbent businesses. Please refer to section 4.1 in Chapter 4 for more information on the general risks and challenges to the digitalization of SMEs.

CASE STUDY: GRAB (SINGAPORE)[84]

Founded in 2012, Grab is one of the most successful sharing economy platforms in Asia, with an implied valuation of approximately $14 billion, and a presence across most of Southeast Asia, including more than 500 cities in Malaysia, Singapore, Indonesia, Cambodia, Myanmar, Philippines, Thailand, and Vietnam. Initially launched as a ride-hailing service, the company has significantly expanded to become the "everyday everything app",—and its services now also include food delivery, movie tickets, videos, hotel bookings, and more recently, financial services. Grab is focusing on helping SMEs through:

- **Creating economic opportunities at scale.** Currently, Grab empowers nine million micro-entrepreneurs.[85] For example, small mom and pop food stalls can partner with Grab to create an online presence and increase their customer reach, thus leveling the playing field.
- **Empowering merchants of all sizes to reach new heights.** Grab announced in January 2020 a merchant platform that will help SMEs with procurement, marketing, finance, and business management. In addition, the company opened its first GrabKitchen, which are cloud or delivery-only kitchens that host multiple food and beverage brands under one roof.[86] GrabKitchen provides kitchen facilities, financing, and a payment gateway, allowing small businesses to significantly save in operational costs and thus expand more rapidly.

E-Commerce

E-commerce is significantly transforming the global business and commerce landscape at a rapid pace. Thanks to advances in cloud computing, Big Data analytics and AI/ML, e-commerce has evolved to become an essential part of retail and business sales in developed and developing economies. Annual online retail sales were approximately $2.3 trillion in 2018, growing at 25 percent when compared to 2017.[87] The largest e-commerce market in the world is China at $1.1 trillion as of 2018, representing more than 45 percent of the total global e-commerce sales, which is more than the combined sales of North America, Europe, Latin America, Middle East, and Africa.[88] The strong growth in e-commerce sales will continue unabated for the next few years—it is forecasted that total e-commerce sales will almost triple by 2023 to $6.5 trillion.[89] Due to its formidable growth rate, e-commerce is becoming an important share of global retail sales, growing from about 1 percent of global retail sales in 2003 to almost 5 percent in 2017. From a regional perspective, China is by far the largest, with e-commerce representing 23 percent of the country's retail sales, followed by South Korea (20 percent), the United Kingdom (15 percent), and the United States (11 percent).[90] (See Box 3.4 for a discussion of E-commerce in MENA).

E-commerce opens new business opportunities for women, with the ratio of women to men entrepreneurs in e-commerce at or near parity, compared to a ratio of 1:3 in traditional businesses.[91] About half of the SMEs in Alibaba's Taobao e-commerce platform are women-owned, which is a larger share than their offline counterparts. In 2016, 47 percent of sales in Taobao platforms were achieved by e-shops owned by women.[92] E-commerce has enabled female entrepreneurs to start businesses at home and work flexible hours.

The advent of e-commerce is having a positive impact on SMEs globally. E-commerce is democratizing the playing field for businesses across the globe. It enables all merchants,

irrespective of their size, gender, or location, to display their products and services online on an equal footing and to be more efficient and transparent. In addition, e-commerce offers considerable opportunities for SMEs to expand their customer base, enter new product markets, and rationalize their business. A recent survey conducted on Indonesian SMEs that were part of e-commerce platforms found that the main benefits for SMEs to participate in e-commerce were increased sales, reduced operating costs, and reduced costs of purchasing and procurement.[93] **E-commerce has opened a gateway of new opportunities for SMEs to access international markets, find new sources of demand, and build value through exposure to new technologies.** For example, an SME in an e-commerce platform based in Mexico may be able to reach on average 25 countries, whereas a traditional offline business may only reach three countries.

The transactions made on the e-commerce platform are recorded digitally, which can serve as an important data source for investors to provide access to finance for SMEs. For example, due to the massive amount of transactional data collected by Amazon from the different merchants in its platform, the company is able to utilize AI and ML algorithms to assess the creditworthiness of the merchants and offer them working capital loans.

There are many risks and challenges that SMEs face when joining an e-commerce platform to sell their goods and services. Risks related to online verification of customers, cybersecurity, fraudulent transactions and data privacy issues are most commonly cited by business owners. In addition, inadequate trade policies in some countries can hinder the competitive advantage that SMEs may gain from e-commerce platforms. For instance, some emerging market countries do not allow trading on international e-commerce platforms due to lack of reserve currency and therefore block any imports through these platforms.

CASE STUDY: ALIBABA AND TAOBAO VILLAGES (CHINA)

Alibaba is the largest e-commerce firm in the world in terms of gross merchandise volume (GMV), with GMV on its China retail marketplaces exceeding $853 billion in 2018-2019 fiscal year and a market capitalization greater than $580 billion. Alibaba supports an estimated 10 million jobs, or 1.3 percent of China's workforce.[94] The company's main innovation is its ability to build an ecosystem where the platform provides infrastructure and resources (marketing tools, digital knowhow, finance, logistics, and so forth) that an SME would need to go online. The company has focused on helping Chinese people in rural areas, given that 40 percent of China's population—nearly 600 million people—live in rural communities.[95] To that end, Alibaba developed the concept of "Taobao villages", which are rural e-commerce hubs that feature Alibaba's logistics, service, and training to encourage farmers to engage in online sale of farm products and local specialties. To be considered a Taobao village, a community needs to have total annual e-commerce transactions of over 10 million RMB ($1.4 million) and more than 100 online stores operated by local residents in the village. The Taobao villages have emerged and rapidly expanded throughout the country; from 20 in 2013 to 4,310 as of August 2019. The Taobao villages are present in 25 provinces, where 250 million out of China's nearly 600 million rural villagers reside.[96] A study issued by the World Bank in 2019, elaborating how e-commerce can boost job creation in developing countries, highlighted the Taobao village experience. The report shows that in Taobao villages, households participating in e-commerce have a per capita income 80 percent higher than households that do not participate; and e-shop workers have wage levels equal to or higher than workers in urban private industries.[97] Interestingly, the study also showed that to set up an online e-commerce firm in these rural villages only requires a middle school education level, making it possible for anyone without specialized skills to be involved.

Digital Banks

Digital banks, also known as "challenger banks", "neo banks', or "FinTech banks", are taking hold in both developed economies and emerging markets, demonstrating strong growth in terms of investment and number of customers. In 2019, 13 digital banks raised over $100 million in equity

CASE STUDY: SOLARISBANK (GERMANY)

Founded in 2016, solarisBank is a technology firm with a banking license in Germany offering a completely digital BaaS platform. The company's BaaS solution is modular to ensure seamless and selective integration of financial services customized to particular business models. solarisBank offers its business partners white label financial services such as bank accounts, transactions, KYC checks, or payment cards through APIs. This way, solarisBank's partners are not required to obtain their own banking license, which is expensive and time-consuming. Through its partners, solarisBank offers digital loans to SMEs using its business lending APIs providing a digital end-to-end process. For example, Penta, a Berlin-based digital bank that focuses on providing financial products to SMEs, has a partnership with solarisBank, whereby solarisBank offers lending APIs and a banking license for Penta operate without any regulatory concerns.

financing, and six of them are considered unicorns[n]. Most of the digital banks are based in the United States and the United Kingdom, but a few are emerging in Latin America and Asia. Moreover, the smallest digital bank has over 500,000 customers, while the largest, NuBank from Brazil, has more than 15 million customers. Digital banks provide another source of digital lending products for SMEs, which can help close the financing gap.

There is no single consensus definition of digital bank. The term has been applied to banks that rely on digital technology in varying ways and to varying degrees, and to different business models. For the purpose of this report, digital banks can be defined as licensed financial institutions that have no physical, customer-facing presence and rely on the innovative use of technology to offer banking services to individuals and SMEs exclusively through digital channels. Digital banks typically have the flexibility to serve new segments and create market dynamics that promote market efficiencies.[98] Unlike some FinTechs that might focus on specific financial products/services, digital banks offer a wide range of digital financial solutions to customers. Digital banks provide another source of digital lending products for SMEs, which can help close the financing gap. Three business models have emerged for fully digital retail banks:[o]

- **Digital native retail bank**—greenfield[p] digital banks built from scratch and unrelated to other financial service providers in the market. Example: NuBank (Brazil).
- **Greenfield bank launched as an offshoot of a BigTech company**— initially, this type of digital bank was created as an offshoot of BigTech e-commerce platforms, such as Alibaba and Tencent, and are sometimes referred to as a marketplace bank. However, the term is a misnomer, since BigTech companies that launch digital banks are not necessarily marketplace platforms. For example, Baidu, China's giant search engine, launched a digital bank, AiBank, in 2017 in partnership with China CITIC Bank. Example: WeBank (China).
- **Incumbent that pursues a total digital transformation—** refers to a traditional bank that is advanced in its transition to a fully digital financial institution, where digital innovation pervades every part of the bank, from consumer to corporate, SMEs to transaction banking and has adopted a digital-only model for all future expansion (even if the bank has not fully transitioned out of its legacy branches). Example: DBS's Digibank (India).

In addition to the three business models described above, a related business model known as Banking-as-a-Service (BaaS) is also gaining momentum predominantly in developed economies. This business model enables SMEs to access customized loan products and other financial services, including payments accounts, via digital platforms that leverage banks' technology stacks and banking licenses to offer a range of financial services and products through APIs connected to different banks and financial services providers. Both banks and FinTechs can operate BaaS platforms. Essentially, BaaS offers white label solutions through APIs for core banking, cards, payments, consumer lending, SME lending, and KYC services. Through the BaaS model, SMEs may be able to access customized loan products based on the partnerships created between FinTechs and banks through APIs or other means. Examples of BaaS companies include solarisBank (Germany) and SoFi (United States).

n A unicorn refers to a privately held startup company with a valuation at over $1 billion.

o Please note that numerous sources have provided different views on the digital banking business models that have emerged. This report provides a view of the business models based on what has been published in other sources.

p A greenfield bank is one that adopts its technology from scratch, instead of integrating new digital products, services and systems into its legacy framework

BOX 3.4

Key Enablers[q]

SPOTLIGHT ON THE MENA REGION

Sharing Economy

The sharing economy in the MENA region is rapidly expanding due to the strong penetration rates of the Internet and smartphones, as well as to advances in technology such as cloud computing and Big Data analytics. Favorable conditions, including high levels of urbanization, a ready labor force, national digitization plans, and a lot of available investment capital are also important factors driving the growth of the sharing economy. Most of the sharing economy platforms are focused in GCC countries, with a lower adoption rate in the rest of the region. It is estimated that GCC consumers spent at least $10.7 billion on sharing economy platforms, which generated an estimated $1.7 billion in revenues for these platforms.[99] The largest sector of the sharing economy in the region is transportation (that is, ride hailing), representing approximately 30 percent of the total amount spent by consumers, followed by household services, business services, and accommodation. This breakdown is very similar to what is observed in other parts of the world, except accommodation that typically directly follows transportation. Approximately 80 percent of the GCC-based sharing economy players are based in the United Arab Emirates.[100]

The sharing economy business models of the region originated from the models introduced in the United States and other G20 countries, with many platforms including Uber and Airbnb also having a local presence in MENA. However, the local platforms have adapted their operations to meet regional infrastructure and laws. As an example, accommodation platforms in the GCC list properties for sale or long-term rental, as opposed to just offering affordable short-term stays. Similarly, platforms like ServiceMarket and mrUsta in Dubai, which offer household services only employ professionals who already have a trade license or are registered with the labor department, whereas in other parts of the world, these platforms mainly employ freelancers. Transportation platforms have also developed differently, acting as aggregators of licensed transportation services rather than employing the peer-to-peer model that is used in other parts of the world.

The rise of the sharing economy has positive impacts on the local workforce, as well as the youth and women in the region. In particular, the sharing economy can be a large source of employment for locals as well as a source of additional income for expatriates specifically in the GCC countries. A survey performed by Booz & Co. in 2010 showed that 62 percent of GCC youth favored self-employment.[101] Due to the flexible nature of work arrangements, the sharing economy offers the opportunity for the youth and women to work on a part-time basis or even remotely. Based on PwC's sharing economy survey of GCC residents, the reduced cost of services was cited as the main benefit of sharing platforms, followed by benefits to producers and consumers and increased flexibility.[102] SMEs also benefit from the sharing economy by partnering with different platforms to offer their services through them.

CASE STUDY: CAREEM (UNITED ARAB EMIRATES)

Established in July 2012, Careem was the pioneer of ride-hailing services in the MENA region, but has recently expanded its platform to include mass transportation, delivery, and payments. The company has aspirations to become a super-app focused on all of the consumer's daily needs. Currently, Careem is present in 15 countries and

[q] Please note that Open Banking for MENA will be covered as part of the Regulatory Frameworks sub-section under the Regulatory Policy Issues below.

more than 100 cities in the Middle East, Africa, and South Asia. It has more than 1 million drivers and its platform is used by more than 33 million people. In March 2019, Uber agreed to acquire Careem for $3.1 billion.[103] Careem has a commitment to help the underserved and to create jobs in the region. In June 2017, the company launched operations in Palestine as part of a commitment to create 1 million jobs in the MENA region by the end of 2018.[104] In addition, the company employs women drivers in Pakistan, and it is planning to have a female workforce of 20,000 by 2020. In 2017, Careem signed the Women Empowerment Principles, the UN Women and United Nations Global Compact, reaffirming its participation in contributing to gender equality and sustainability.[105] As the company expands into food delivery and logistics, it is supporting SMEs by giving them the ability to expand their customer reach and by providing access to financing for working capital purposes.

E-Commerce

E-commerce in the MENA region is still nascent, but is rapidly growing, especially in the GCC countries. E-commerce penetration is only 2 percent of total retail sales in the region, which is significantly lower than the United States at 11 percent of retail sales or China with 23 percent of retail sales.[106] The penetration rate varies based on the level of income and the amount of digital technology adoption in the MENA region. The e-commerce penetration rate is highest in the United Arab Emirates at 4.2 percent of retail sales, followed by Saudi Arabia (3.8 percent) and Egypt (2.5 percent).[107] While adoption of e-commerce remains low when compared to G20 countries, e-commerce in the MENA region has grown by 25 percent annually since 2014 and is expected to almost double by 2021, from $29 billion in 2018 rising to $49 billion.[108] Interest in e-commerce in MENA has taken center stage as BigTech firms, such as Amazon, have entered the region with the acquisition in 2017 of Souq, the leading MENA e-commerce firm with more than 50 million customers, for $580 million. That same year, Noon.com, another e-commerce firm, was launched with $1 billion of funding backed by the Public Investment Fund of Saudi Arabia.[109]

The promise of e-commerce growth is supported by consumers who are predominantly young, tech-savvy and highly digitally connected around the world, especially in GCC countries. Figure 3.15 below shows that the GCC region is ahead when compared to more developed e-commerce markets as it relates to Internet, smartphone and social media penetration.[110]

FIGURE 3.15

Comparison of Internet, Smartphone, and Social Media Penetration—GCC Countries vs. Developed E-Commerce Markets

	Internet penetration	Time spent online daily	Smartphone penetration	Social media penetration
UAE	91%	7 hours, 49 minutes	66%	99%
Saudi Arabia	73%	6 hours, 45 minutes	62%	75%
Egypt	43%	8 hours, 10 minutes	28%	40%
US	85%	6 hours, 30 minutes	69%	71%
China	59%	6 hours, 30 minutes	49%	65%

Sources: World bank; We Are Social; eMarketer; Bain analysis.
Notes: UAE figure is from World Bank data for the year 2016; all other figures are from eMarketer and are from 2018; GCC stands for Gulf Cooperation Council and includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and UAE.

CASE STUDY: BEEHIVE (UNITED ARAB EMIRATES)

Beehive is a Dubai-based leading FinTech pioneer and the first peer to peer (P2P) lending platform to be regulated in the MENA region. Launched in 2014 and regulated by the DFSA since 2017, Beehive is the first globally certified Sharia-compliant platform. To date, Beehive has funded more than 550 SMEs, a total of over $136 million, with over 12,500 registered investors on its platform. Harnessing the Beehive proprietary credit model, SMEs can be credit assessed within just one hour and access cash in days rather than weeks or months. Eligible SMEs have access to unsecured finance from $27K with repayment terms between six and 36 months. Beehive combines technology and innovative KYC procedures to allow SMEs faster and cheaper access to finance. It provides creditworthy SMEs an alternative route to traditional financing by utilizing a crowdfunding model that eliminates the cost and complexity associated with traditional finance solutions. This flexibility provides SMEs with faster access to lower-cost finance resulting in up to 30% savings. Notably, Beehive has maintained a low NPL ratio of 1.5% compared to the 4% rate found in the traditional banking sector. Additionally, Beehive's Working Capital Finance provides a quick short-term solution to improve an SME's cash flow. Beehive connects businesses with investors willing to lend against the value of their invoices, enabling businesses to receive cash advances, therefore providing the liquidity means to drive growth. In practice, businesses can list invoices due within 30–150 days and receive up to 80% of their outstanding amount.

Regulatory Policy Issues

The public sector has a crucial role to play. Governments, policymakers and regulators around the world are gaining a deeper appreciation of the impact of digital technology on enabling access to finance to SMEs. To better understand the wide variety of regulatory policy issues, this report classifies them into the following categories:

- Regulatory frameworks that directly and indirectly impact access to finance and address the need to protect the financial system from fraud, money laundering, terrorist financing and other illicit finance abuse
- Government/regulator-led programs that encourage innovation and testing of new business models, as well as awareness and investment in startups and SMEs. A related area is the digitization of SME services by government agencies
- Public-private partnership programs

Regulatory Frameworks

The proliferation of digital financial products, such as digital payments, digital lending and equity crowdfunding, is making it possible to close the financing gap for SMEs. FinTechs and mobile network operators (MNOs) are mainly responsible for driving the development of digital financial products. However, the adoption and widespread availability of these products are heavily dependent on the financial regulatory frameworks established in different countries.[111] Existing financial regulations may not adequately align with the innovative ways FinTechs and BigTech firms conduct financial activities and unnecessarily hinder their growth and development. Additionally, lack of clarity as to how existing regulations apply to innovative financial products and services creates regulatory uncertainty for both FinTechs on how to operate in the country for their customers and for their customers and can also hold back foreign investment in these companies. At the same time FinTechs' activities may pose risks to consumers and financial stability, as well as money laundering, terrorist financing, fraud and other illicit financing risks. Regulators and policy makers should identify the risks presented by new and emerging technologies in the financial sector and address them in appropriate, risk-based ways that achieve regulatory objectives while accommodating innovative financial services and business models. Developing and developed countries alike face challenges in adapting their regulatory frameworks to the pace of innovation in the financial sector, and need to future-proof regulations as much as possible in order to support responsible innovation while complying with the global AML/CFT standards and meeting the policy goals related to consumer and investor protection, financial inclusion, transparency, market efficiency, competition and financial stability.

Financial regulators have taken different approaches to regulate digital financial products, such as:

- Applying the pre-existing financial regulatory frameworks
- Making adjustments to the pre-existing financial regulatory frameworks to address specific FinTech activities
- Creating bespoke regulatory frameworks to cover FinTech activities

Where bespoke regulatory frameworks have been created to cover FinTech activities, there are key provisions that are typically incorporated in the regulations. Table 3.4 provides a summary of the key provisions in the regulatory frameworks for the different digital financial products. It should be noted that open banking and electronic invoices are not considered digital financial products and thus are not included in the table. These regulatory frameworks apply to digital financial products in general; there are no specific regulations that apply only to digital financial products serving SMEs.

In the United States, the Treasury Department is keenly aware of the interplay between the federal and state regulatory frameworks, the need for innovation and expansion for nonbanks and FinTechs, and the integral part that these institutions play in the U.S. and global economy, in particular for SMEs. As such, the U.S. Treasury issued a report in July 2018 that provides a series of recommendations on how regulatory reform can promote innovative SME financing, within the context of creating a financial system that works for all Americans.[112]

A review of the regulatory frameworks for each type of digital financial product is provided below.

Digital Payments

Digital payments are regulated in most G20 countries. While most countries modify existing payments regulation to capture innovative methods to make payments electronically, such as mobile payments, a few countries have issued specific new regulations. These bespoke regulations are typically put in place in countries with a limited existing card payment infrastructure, and most of them require that all participants obtain a license to conduct electronic payment transactions. In addition to the provisions highlighted in Table 3.4, several jurisdictions in emerging markets have set up risk based CDD requirements, depending on the level of potential money laundering and terrorist financing risk presented by the type

TABLE 3.4

Key Provisions in the Financial Regulatory Frameworks for Digital Financial Products

Digital Financial Product	Examples of Key Provisions
Digital payments	• Licensing and registration—all digital payment providers need to be licensed in order to conduct digital payment transactions • Fair treatment of clients—information is communicated in a language that is simple, clear, accurate, and not misleading. No unfair discrimination based on gender, religion, age, ethnicity or disability • Safeguarding of client funds in digital transaction accounts—creation of segregated accounts • Customer due diligence (CDD) and other AML/CFT compliance, including customer identification/verification, transaction monitoring and identifying and reporting suspicious activities, and recordkeeping • Balance limits on e-wallets • Transparency in product information—clear statement of product features, terms and fees • Client data protection—confidentiality and security of client data
P2P/Marketplace Lending	• Licensing, registration and reporting • Investor protection—FinTech platforms are obligated to perform due diligence and assess the information provided by borrowers. Borrowers are obligated to ensure the validity, authority, and completeness of information provided to investors • Clearing, settlement, and segregation of client money—P2P platforms are required to have all funds related to loans segregated in a separate bank account from the platform's proprietary funds • Capital requirements—P2P platforms are required to have a minimum capital requirement to ensure they operate prudently and manage financial risks • CDD and other AML/CFT compliance, including customer identification/verification, transaction monitoring and identifying and reporting suspicious activities, and recordkeeping • Transparency in product information—clear statement of interest rate charged and fees • Consumer and borrower data protection—confidentiality and security of data • Credit analysis and underwriting
Equity Crowdfunding	• Clear and accurate communications with customers, as well as information provided to investors regarding the risks associated with investing in the product • CDD and other AML/CFT compliance, including customer identification/verification, transaction monitoring and identifying and reporting suspicious activities, and recordkeeping • Separate client assets from firm assets • Client data protection—confidentiality and security of data • Eligibility criteria for firms looking to fundraise, such as minimum company age and profitability • Minimum capital requirement

of financial or service provided by the FinTechs. Examples of product, customer, and geographic/country risk factors to be considered include (but are not limited to):

- *Product risk*: type of financial product, service, or delivery channel; transaction value, velocity (number of transactions in a given period); source of funds; geographic scope (cross-border)
- *Customer risk*: individual or entity (e.g., business); nature of business (e.g., ownership and organizational structure, whether cash-intensive, whether adequately regulated/supervised); and
- *Country/geographic risk*: effectiveness of AML/CFT regulatory regime –e.g., whether the country has been identified by credible sources, such as FATF or FATF-Style Regional Body (FSRB) mutual evaluation reports (MERs), MER-follow-ups, or other country assessments as:
  - lacking adequate AML/CFT systems;
  - having significant levels of criminal activity, including corruption
  - providing funding or support for terrorist activities or organizations or that have designated terrorist organizations operating within the country.[r]

[r] For additional guidance on applying the FATF risk-based approach to CDD in the context of financial inclusion, *see FATF Guidance on AML/CFT measures and financial inclusion, with a supplement on customer due diligence, available at,* http://www.fatf-gafi.org/publications/fatfgeneral/documents/financial-inclusion-cdd-2017.html. In the context of innovative financial products and services, *see e.g., Guidance for a Risk-Based Approach to Virtual Assets and Virtual Asset Service Providers, available at,* http://www.fatf-gafi.org/publications/fatfrecommendations/documents/guidance-rba-virtual-assets.html and *Guidance for a Risk-Based Approach to Prepaid Cards Mobile Payments and Internet-Based Payment Services* https://www.fatf-gafi.org/publications/fatfrecommendations/documents/rba-npps-2013.html

CASE STUDY: INDONESIA'S DIGITAL PAYMENTS REGULATORY FRAMEWORK

Bank Indonesia (BI), the main regulator overseeing the payments sector in Indonesia, requires that all firms that operate in the digital payments space obtain a license to operate in the country and subject them to AML/CFT and other regulatory requirements. Furthermore, Bank Indonesia has categorized these firms into six groups: E-money issuer; E-wallet provider; Payment Gateway operator; Merchant Acquirer; Switching provider; and Money Remittance/Fund Transfer Operator. Each type of firm plays a role in the digital payment value chain. The regulation also defines two types of e-money users: (i) "registered" users that must conduct standard customer identification/verification and other CDD measures; and (ii) "unregistered" users, which are permitted to conduct simplified CDD, under which only the customer's name and phone number are required for customer identification/verification at onboarding. The two categories establish a risk-based approach to CDD in the digital payments space: for registered users, ML/TF risks are mitigated because maximum balances in e-money accounts are limited to 10 million IDR (US$604) and monthly transactions are limited to 20 million IDR (US$1,208); for unregistered users, the maximum balance is only 2 million IDR, and they are limited to certain types of e-money transactions, such as top-ups, cash-in and small purchases. In addition to establishing AML/CFT requirements, the digital payments regulation defines minimum paid-up capital requirements and foreign ownership limits for all firms operating in the digital payments sector.

A major challenge to the adoption of digital payments by SMEs and consumers is the lack of interoperability between different e-money issuers and e-wallets, since many of them operate independently from one another. One way to address the interoperability issue is through the introduction of a QR code payment standard that will require all payment service providers to use the same technical format. Several countries, such as Thailand and Indonesia, have introduced QR code payment standards in their respective countries. The case study below highlights the example of Argentina.

CASE STUDY: QR CODE REGULATORY FRAMEWORK (ARGENTINA)

The Banco Central de la Republica Argentina (BCRA), or Argentina's Central Bank, has established QR code payment standards in the country, which means that a standardized QR code will be able to be used by all digital wallets, regardless of which company issued the digital wallet. This change will make it easier for merchants since they will only need to use one standardized form of QR code and will be able to accept payments from all digital wallets. The standardized QR code will allow full interoperability between payment providers in order to scale up digital payments adoption in Argentina. In addition, the standardization of QR codes could ensure that there is competition between digital payment service providers so that the focus shifts to services levels as opposed to competing on the infrastructure.

P2P/Marketplace Lending

The regulation of P2P/Marketplace lending is fragmented within the G20 countries, with 56 percent having in place P2P lending regulation (Figure 3.16). For the countries that regulate P2P/Marketplace lending, only 30 percent of them create specific regulations for the activity in G20 countries, while the majority regulate P2P/Marketplace lending using

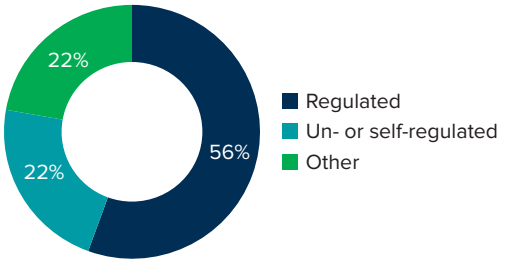
the pre-existing regulatory framework. (See Box 3.5 for a discussion of P2P lending in the MENA region).

In jurisdictions such as the United States and Germany, P2P/Marketplace lending platforms adapt to the existing regulation of banking or payment institutions. For example, in Germany, P2P/Marketplace lending platforms need to apply for a banking license to engage in credit activity or to engage a licensed bank to carry out the lending business. In other European countries, P2P/Marketplace lending platforms have to obtain a credit institution license if the borrower is a retail consumer; however, if the borrower is a small business, then the P2P/Marketplace lending platform is not regulated. In the United States, P2P/Marketplace lending platforms are regulated based on activity. For instance, if a P2P/Marketplace lending platform is engaged in an underwriting, origination, or servicing activity, it may be subject to state lender licensing requirements. Moreover, P2P/Marketplace lending platforms are also subject to federal or state consumer protection laws and federal anti-money laundering statutes. Another important consideration is that the regulatory of treatment of P2P/Marketplace lending is dependent on the underlying legal structure of the obligations created for the borrowers.

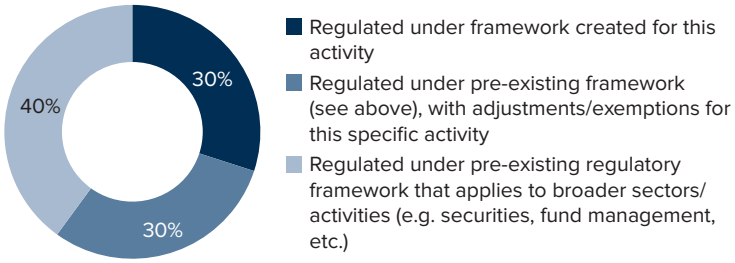
FIGURE 3.16

Regulatory Approaches to P2P/Marketplace Lending in G20 Countries

Approaches to Regulating P2P/Marketplace Lending



P2P/Marketplace Lending Regulated Jurisdiction by Type of Regulation



Source: Cambridge Centre for Alternative Finance (CCAF). Data as of 2019.

CASE STUDY: P2P/MARKETPLACE LENDING REGULATION EXPERIENCE (CHINA)

Before 2015, P2P/Marketplace lending firms in China could test their new business activities without immediate regulatory response from the regulator. The result was an explosion of P2P/Marketplace lending firms in the country, with more than 3,000 emerging in less than two years. China became the leader in P2P/Marketplace lending by volume/value, with more than $100 million of loans as of 2017.[113] However, the tremendous growth in P2P/Marketplace lending created significant risks related to platform failures and fraudulent activities. A report published by China's financial regulator in 2016 found that approximately one-third of all P2P/Marketplace lending platforms were "problematic", many of them conducting fraudulent activities. Ezubao, one of these P2P/Marketplace lending platforms, was running a Ponzi scheme and stole more than $4.6 billion from consumers. These events and the heightened money laundering and terrorist financing risks associated with P2P/Marketplace lending platforms prompted the central bank (PBOC) and China Bank and Insurance Regulatory Commission (CBIRC) in April 2016 to initiate a sweeping rectification program to address misconduct and illegal activities. The Interim Measures for the Administration of the Business Activities of Online Lending Intermediary Institutions were put in place to regulate P2P/Marketplace lending. Under the new rules, micro lenders are not allowed to extend online micro-loans when proceeds are not earmarked for a specific purpose, and financial institutions cannot provide funding to marketplace lenders for their loans. In November 2019, the rectification leadership team announced that all P2P/Marketplace lending platforms must become small loan providers within two years; before they do so, the firms need to clear all outstanding loans in less than one year.[114] Qualified P2P/Marketplace lending platforms must meet a minimum capital requirement of $7 million to become a regional small loan provider

and $141 million to transition into a small lender qualified to operate nationwide. In addition, all marketplace lenders must adhere to AML/CFT obligations. P2P/Marketplace lenders that contained serious credit risks and fraudulent ones would be banned from making the transition and forced to close.

Other Debt Products

Many countries around the world have introduced electronic invoice regulation over the last few years to help SMEs obtaining funding through the factoring of receivables. A recent survey of 82 jurisdictions indicated that 57 of them have a regulatory framework on electronic invoicing in place. In fact, in 10 of the 57 countries, electronic invoicing is mandatory. In the countries that do not have regulatory frameworks, there are five of them where electronic invoicing is not permitted. In addition to helping SMEs obtain funding through factoring, another main motivation by governments to mandate electronic invoicing is to eradicate tax evasion, as well as streamline the collection of local sales taxes. E-invoicing enhances transparency and efficiency, and also encourages informal businesses to be part of the formal economy.

In addition to regulation mandating electronic invoicing, some government institutions[s] have endorsed/authorized digital platforms where SMEs can post and sell their receivables to a diverse group of investors. One example is India's Trade Receivables Discounting System (TReDS), which is a scheme set up in December 2014 and endorsed by the Reserve Bank of India (RBI). The objective of TReDS is to support SMEs to get their bills financed at a competitive rate through an auction where multiple financiers can participate. TReDS standardizes the funding process for SMEs via invoice discounting or factoring. Three entities have been authorized by RBI to set up and operate TReDS platforms, which commenced operations in 2017. Other countries such as Turkey have set up similar digital platforms.

CASE STUDY: RECEIVABLES RECORDING CENTER AND TRADE CHAIN FINANCE PLATFORM (TURKEY)

Set up and owned by the Association of Financial Institutions (AFI), the Receivables Recording Center is part of Article 43 of Turkey's Law on Financial Leasing, Factoring and Financing Companies. The purpose of the Receivables Recording Center is to have one platform where all assigned invoices/receivables are posted by the factoring companies and banks to prevent multiple financing of the same receivables while financing mostly SMEs. The unique feature of the Receivables Recording Center is that it only records each invoice once, which is important to avoid issues of multiple assignment of the same invoices to banks and other financial institutions. The platform is online and is integrated with the System of Revenue Administration at the Ministry of Treasury and Finance. In addition, the platform verifies the e-invoices that are created from the real trade are valid. Moreover, the Receivables Recording Center provides reporting of all receivables data to the sector. Since its inception in 2015, 26.5 million documents have been recorded into the Receivables Recording Center by 56 factoring companies and 24 banks, and more than 750,000 double assignments have been prevented by the end of 2019. The Receivables Recording Center has also had a positive impact on the use of e-documents (e-invoice, e-archive, etc.) due to the important role of e-invoice discounting in SME financing. The e-invoice ratio increased from 23% to 70% within five years.

Integrated with the Receivables Recording Center and e-invoicing systems, the Trade Chain Finance Platform (TCFP) was created in March 2019 by the Association of Financial Institutions. The main objective of TCFP is to connect financiers with SMEs through a digital platform, thereby reducing their cost of funding and integration to the banks' own systems. Receivables finance products such as Supply Chain Finance, distributor finance,

[s] Not all invoice trading platforms are government led; they are also being set up by private firms.

all traditional factoring products, and credit insurance services are provided by financial institutions and banks through the TCFP to companies. Suppliers, buyers, banks, factoring companies, participation banks, credit insurance companies, and all types of financiers could be users of this platform. SMEs play an important role in economic and social development. Therefore, it is important to take steps to strengthen the vulnerable structures of SMEs. Continuity of cashflow is vital for them as they have difficulty in accessing finance, have a limited access to high technology and produce a limited amount of high value-added products and exports. The Trade Chain Finance Platform serves as an opportunity to overcome financial and technological obstacles of SMEs.

Equity Crowdfunding

Equity crowdfunding mainly falls under the purview of the financial regulators supervising the securities and capital markets since it involves the issuance of equity capital to investors. General securities law typically imposes strict limits on who can intermediate the investment (the platforms), who can issue the securities and under what circumstances (the fundraisers; in this case, the SME) and who can invest in this form of equity (investors). Regulating equity crowdfunding platforms as securities issuers and requiring them to comply with general securities law could be inappropriately burdensome, given other ways to protect investors and market integrity in the crowdfunding space. Some jurisdictions have adopted less onerous regimes for equity crowdfunding. For example, the JOBS Act in the United States establishes lighter entry requirements, special conduct of business provisions for the platforms, and limited reporting requirements for fundraisers and issuers. It also restricts the activities and services that equity crowdfunding platforms are allowed to perform, places investment limits on the investor, and requires the appointment of a third-party custodian to hold the funder's assets.[115]

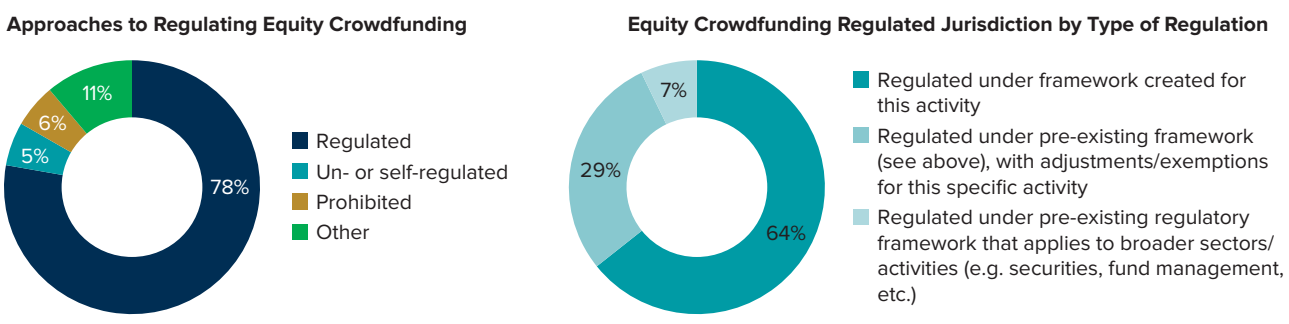
In addition, the global AML/CFT requirements established by FATF apply to natural or legal persons who conduct as a business specified activities or operations for or on behalf of a customer, one or more of which are typically involved in equity crowdfunding, such as participation in securities issues and the provision of financial services related to such issues; safekeeping and administration of cash or liquid securities on behalf of other persons; or trading in securities, other financial instruments, or commodity futures.

Unlike P2P/Marketplace lending, equity crowdfunding is more regulated, with 78 percent of financial regulators in G20 countries responding that there is regulation in place in their respective countries (Figure 3.17).[116] All of the G20 high-income countries and more than half of the upper-middle- and lower-middle-income countries have regulation in place for equity crowdfunding.(See Box 3.5 for a discussion of equity crowdfunding in the MENA region).

Of the countries that regulate equity crowdfunding, 64 percent of the G20 countries have issued bespoke regulations specifically created for equity crowdfunding.[117] The most common permissible activities for regulated equity crowdfunding platforms are fundraising for incorporated

FIGURE 3.17

Regulatory Approaches to Equity Crowdfunding in G20 Countries

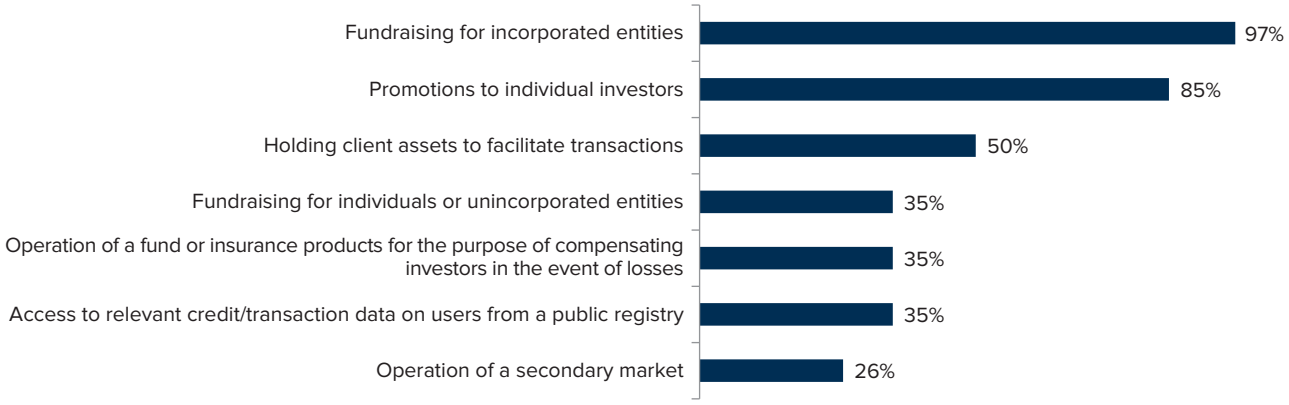


Source: Cambridge Centre for Alternative Finance (CCAF). Data as of 2019.

entities and promotions to individual investors, which are essential for equity crowdfunding (Figure 3.18).[118] Although the heart of equity crowdfunding is the ability to raise funds from investors, some regulators restrict access to equity crowdfunding platforms to professional or institutional investors.

FIGURE 3.18

Permissible Activities for Regulated Equity Crowdfunding Firms



Source: Cambridge Centre for Alternative Finance (CCAF). Data as of 2019.

CASE STUDY: CONSOB EQUITY CROWDFUNDING REGULATION (ITALY)

Italy enacted Consob Regulation n. 18592/2013, or the Regulation for the Collection of Risk Capital via On-line Portals in 2013, making it the first country in Europe to have a specific regulation on equity crowdfunding. Initially, the regulation was limited to helping technology startups raise capital, but over the last few years, the regulation has been amended to include all small businesses irrespective of their corporate form. The regulation requires SMEs seeking capital through equity crowdfunding to have the following criteria: (i) fewer than 250 average number of employees during the financial year; and (ii) a total balance sheet not exceeding 43 million EUR. It also introduced a set of transparency requirements and conduct-of-business rules for equity crowdfunding operators who manage the online portal to ensure adequate service reliability.[119] As of June 30, 2019, more than 360 companies had raised capital through an equity crowdfunding platform in Italy, of which 293 were technology startups and 76 were SMEs. Most recently, the 2019 budget law in Italy introduced an amendment to the equity crowdfunding law to extend the provisions on crowdfunding to bonds and other debt instruments issued by small enterprises.[120]

Open Banking and Digital Banking

Open banking is transforming the banking sector, making it easier for customers to access their data. Open banking regulations require banks to share customer data (with prior customer consent) with FinTechs and other non-financial institutions, providing significant benefits for consumers and SMEs. The Bank for International Settlements (BIS) summarizes the key benefits as follows: "This sharing of customer-permissioned data by banks with third parties is leveraged to build applications and services that provide faster and easier payments, greater financial transparency

options for account holders, new and improved account services, and marketing and cross-selling opportunities."[121] The rationale of open banking is to provide a level playing field for all participants, but at the same time foster an innovative, secure, and competitive financial market.[122] **Open banking can help SMEs use open data and payment applications which can enable SMEs to gain access to finance more easily and also aid in their digital transformation.** Account aggregation is the first application that most people think of when open banking is mentioned, as it links financial accounts across banks and/or geographic borders and can provide a small business with a coherent picture of its consolidated financial position. When combined with other tools such as an online accounting or payroll package, account aggregation allows the SMEs to easily make tax and salary payments in just a few clicks. However, one of the main challenges for regulated open API frameworks is how to encourage adoption of business models that maintain a level playing field between banks, obliged to share their data, and the FinTechs accessing that data.

The EU is considered the "cradle" of open banking, with EU's Second Payment Services Directive (PSD2) regulation and the United Kingdom's Open Banking Standard pioneering the concept. However, these two regulatory frameworks vary in scope and requirements. For instance, the EU's PSD2 applies only to payments processing data that banks need to share with a third party with prior customer consent. The United Kingdom's Open Banking Standard requires the nine largest banks to share information with third parties about different bank products and fees offered. Since the introduction of PSD2 in the EU and the Open Banking Standard in the United Kingdom, there are now more than 50 jurisdictions around the world that have begun working on establishing, or have already established, open banking regulatory frameworks.[123] Although there is great interest from many countries, open banking is still in the early stages of development in most jurisdictions.

Two main approaches to open banking are being adopted by different countries: (i) market driven, and (ii) regulatory-driven. G20 countries such as Japan, South Korea, and the United States currently have no compulsory open banking regulation, but their policymakers are introducing a range of measures to promote the adoption of data sharing frameworks in banking.[124] For example, the Financial Services Agency (FSA) in Japan established an authorization process for third party providers (i.e., FinTechs), introduced an obligation for banks to publish their open API policies, and encouraged banks to partner with at least one third party provider by end of 2020. Most Japanese banks are on track to fulfill that target. The United States has no similar government or regulatory initiatives, but the major banks are aware of the strategic importance of open banking and are developing API-based offerings in partnership with FinTechs. In contrast, two major G20 jurisdictions outside the EU have adopted a regulatory-driven approach to open banking: Australia and Mexico.

CASE STUDY: OPEN BANKING REGULATION IN AUSTRALIA AND MEXICO

The open banking regulation in Australia (Consumer Data Right Act), will allow consumers to share their data with whichever authorized third party they choose. However, the CDR is a data policy initiative, not a financial services one.[125] While it initially applies to banks, the CDR will eventually apply to other sectors, such as energy and telecommunications. Also, the CDR is the first open banking regulatory framework that introduces the concept of reciprocity—both the data holder and data recipient must reciprocally share data. The idea of reciprocity is to promote greater competition and make sure both parties view the CDR regime as fair. Mexico has established an interesting open banking regulatory framework as part of the FinTech Law introduced in 2018. Like the Open Banking Standard of the United Kingdom, Mexico's open banking regulation promotes greater protection of consumer data and fosters competition. However, a major difference is that the Mexican open banking regulation 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.

Digital Banks

Digital banks, also known as challenger, virtual, or Internet banks, have been growing rapidly throughout Europe, the United Kingdom, and the United States over the last five years. More recently, interest has significantly expanded in Southeast Asia and Hong Kong SAR (China). **Financial regulators have taken different approaches to regulating digital banks, with some countries issuing specific licenses, while other jurisdictions regulate digital banks under the existing bank regulatory framework.** For instance, the United States was one of the pioneers of FinTech startups' providing digital financial services, but due to its complex federal-state banking regulatory system, most FinTechs provide digital banking services by either partnering with licensed banks via APIs on a BaaS platform or becoming acquired by licensed banks[126] Like the United States, the United Kingdom and Europe do not have specific regulations or licenses for digital banking. Nevertheless, a relatively large number of digital banks have emerged, such as Revolut, Fidor, N26 Bank, Monzo, Atom Bank, and Orange Bank, to name a few. Most of the digital banks in Europe and the United Kingdom have applied for, or already have obtained, banking licenses in their respective countries.

In Asia, digital banking licenses are becoming more prevalent; in particular, Malaysia, Singapore, and Hong Kong SAR (China) have developed specific regulations that digital banks need to follow. In 2019, the Monetary Authority of Singapore (MAS) announced that it would issue up to five digital banking licenses to non-bank companies, and it created a competitive process for companies to apply for these licenses. Two of the licenses will be for digital retail banking, which will allow the firms to provide financial services and take deposits from customers. The other three licenses will be for digital wholesale banking, mainly focused on serving SMEs and other non-retail sectors. So far, MAS has received 21 applications. The Hong Kong Monetary Authority (HKMA) granted eight digital banking licenses in 2019, after receiving 30 applications. In Malaysia, Bank Negara Malaysia (BNM) is following the footsteps of Singapore by planning to grant up to five digital banking licenses in 2021. The provisions for digital banking licenses vary by jurisdiction; however, most of them follow closely the same set of supervisory requirements applicable to conventional banks, except for a few specific areas such as initially lower minimum capital requirements, and operating without any physical branches. Some of the key provisions in the digital banking license for Hong Kong SAR (China), Singapore, and Malaysia include the following:

- **Minimum Paid-Up Capital—**In Singapore and Malaysia, there is an initial paid-up capital requirement (in Singapore it is SG$15 million, while in Malaysia it is RM100 million), which eventually grows to a significantly larger amount that is comparable to traditional banks' capital requirements. In Hong Kong SAR (China), there is no graduated approach; the minimum capital requirement is HK$300 million
- **Incorporation**—In the three jurisdictions, the digital bank must be locally incorporated.
- **Foreign Ownership Restrictions**—There are no foreign ownership restrictions in Hong Kong SAR (China) and Malaysia, but in Singapore, the MAS requires that ownership must be controlled by Singaporeans
- **Customers**—Retail and non-retail customers are covered in the regulatory frameworks of Singapore and Malaysia. In Hong Kong SAR (China), the customer base should be primarily retail, but the digital banks can also provide services to other segments
- **Compliance with AML/CFT requirements for banks**
- **Technology-Related Risk**—Security and technology related controls in place should be appropriate to the type of transactions that the digital bank intends to carry out. Digital banks are required to engage a qualified and independent expert to perform an assessment of the adequacy of its IT governance and systems. In addition to these provisions, most jurisdictions require digital banks to provide retail banking services through mobile electronic devices or computers, without setting up any physical branch.

BOX 3.5

Financial Regulatory Frameworks

SPOTLIGHT ON THE MENA REGION

Digital Payments

Regulators in the MENA region have instituted regulatory frameworks on digital payments similar to those of other G20 countries, with more proactive regulators in the GCC countries such as the United Arab Emirates, Bahrain, and Saudi Arabia.

CASE STUDY: THE UNITED ARAB EMIRATES' DIGITAL PAYMENTS REGULATORY FRAMEWORK

The Central Bank of the United Arab Emirates (CBUAE) issued the Regulatory Framework for Stored Values and Electronic Payment Systems in 2017. The regulation requires all eligible payment service providers (banks, telecommunication players, government entities, and payment networks) to obtain a license or authorization to issue stored value facilities, conduct electronic payment transactions, maintain governance and controls mechanisms to ensure adequate protection of users' funds, integrity and security of the payments system, AML/CFT controls, and provide appropriate consumer protection and clarity on consumer rights. While the current Regulatory Framework for Stored Value and Electronic Payment Systems has so far provided a foundation for regulating stored value products, there is an increasing need to review and expand the current regulatory regime to have a comprehensive coverage of all possible stored value products, clearing and settlement systems and other innovative payment services in light of growing acceptance of such products and services by the public. Against this backdrop, CBUAE is currently reviewing the payment regulation with an aim to proposing a comprehensive regulatory policy framework to calibrate regulations according to the risks the services, systems and activities pose by adopting a modular regulatory regime for regulating stored value facilities (SVF), large-value clearing and settlement systems (LCCS), retail payment systems (RFS), and retail payment activities.

P2P/Marketplace Lending

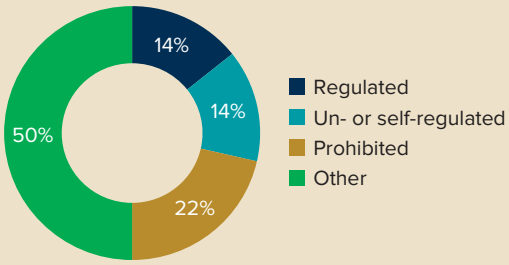
P2P/Marketplace lending is at a very early stage in the MENA region, as are the P2P/Marketplace lending regulatory frameworks. There are only a few P2P/Marketplace lending platforms in the MENA region, and only 14 percent of countries regulate them as such. A few countries explicitly prohibit P2P lending and/or classify their activities as "banking activities", which requires FinTechs to obtain banking licenses and comply with bank AML/CFT obligations in order to operate in the country. Many financial regulators in the region are still evaluating how to regulate these firms, which is one reason why 50 percent of MENA countries are classified as "Other" in their regulatory approach to P2P/Marketplace lending (Figure 3.19).

Equity Crowdfunding

Equity crowdfunding is more regulated than P2P/ Marketplace lending in the MENA region, with 50 percent of regulators responding that there are regulations in place in their respective countries (Figure 3.20). Like P2P/ Marketplace lending, the majority of jurisdictions that are regulating equity crowdfunding are in GCC countries. For the countries that are regulating equity crowdfunding, 57 percent have issued regulations specifically created for equity crowdfunding. All of the bespoke regulations include AML/CFT requirements.

FIGURE 3.19

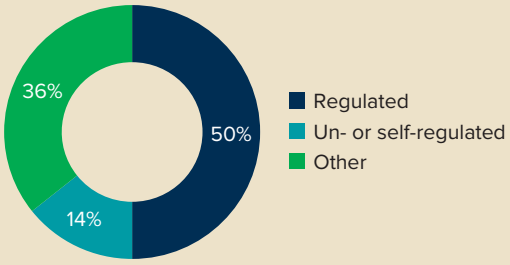
Regulatory Approaches to P2P Lending in the MENA Region



Source: Cambridge Centre for Alternative Finance. Data as of 2019.

FIGURE 3.20

Regulatory Approaches to Equity Crowdfunding in the MENA Region



Source: Cambridge Centre for Alternative Finance. Data as of 2019.

CASE STUDY: EQUITY CROWDFUNDING REGULATION (SAUDI ARABIA)

Currently, the crowdfunding model in the Saudi financial marketplace is equity crowdfunding, which is supervised by the Capital Markets Authority (CMA). As part of Saudi Arabia's Vision 2030, the country is focused on helping SMEs raise the capital they need and has identified equity crowdfunding as one of the methods that could be promising for both SMEs and investors. Saudi Arabia has taken an experimental approach to equity crowdfunding regulation. The CMA granted experimental permits to two equity crowdfunding platforms: Manafa and Scopeer. Under CMA equity crowdfunding regulations, equity crowdfunding platforms need to meet AML/ CFT requirements.[127] Only small businesses with a market valuation of less than 10 million Saudi Riyals can raise funds through equity crowdfunding. Additionally, CMA has set investor limits, such as a minimum investment of 1,000 Saudi Riyals for professional or retail investors and a maximum investment limit of 100,000 Saudi Riyals among five investment opportunities. Overall, the equity crowdfunding regulation is helping SMEs raise capital in Saudi Arabia since it provides a way for businesses to access funds from a source other than banks and VC firms. On April 18, 2020, the Saudi Arabian Monetary Authority (SAMA) announced that it had selected a number of FinTechs to operate in its regulatory sandbox, and that equity crowdfunding for SMEs and entrepreneurs was one of the main products being tested.

Open Banking

In the MENA region, Bahrain, Dubai and Abu Dhabi are taking the lead in introducing open banking in the GCC countries. Of the three, Bahrain is the most advanced, introducing regulation in 2019.

CASE STUDY: OPEN BANKING REGULATORY FRAMEWORK (BAHRAIN)

The Central Bank of Bahrain instituted the Open Banking Module regulatory framework for banks and third-party payment providers, effective June 30, 2019. The Open Banking Module is based in the broadest sense on PSD2, but it differs by having a requirement for a three-factor authentication (PSD2 only has a two-factor authentication). The catalogue of measures, with its clear sanctions for failure to meet deadlines or requirements, also shows how serious Bahrain is about advancing and benefiting from open banking.[128] The National Bank of Bahrain (NBB) is taking the lead in adopting the Open Banking Module—recently, the bank partnered with Tarabut Gateway, a new FinTech specialist and open banking infrastructure provider, to enable NBB customers to connect their account with any other bank in Bahrain to get a consolidated view of their finances.[129]

Digital Banking

CASE STUDY: DIGITAL BANK LICENSING IN ABU DHABI GLOBAL MARKET (UNITED ARAB EMIRATES)

The Financial Services Regulatory Authority (FSRA), the independent regulator of the Abu Dhabi Global Market (ADGM), is the first regulator in the MENA region to introduce a digital banking license. The new licensing system allows three types of applicants: traditional banks looking to develop a digital arm; FinTechs with an innovative value proposition; and partnerships between FinTechs and financial institutions. The digital banks will only be allowed to setup and operate in the ADGM, a free zone in the capital of the United Arab Emirates. Consistent with international standards, digital banks need to fulfill a minimum paid-up capital requirement of $10 million. To support the open banking architecture of such digital banks and facilitate open innovation with FinTech firms, the ADGM also issued a set of guidance on technology and data standards for the development and use of APIs, enabling different systems to connect and share data securely.[130]

Government/Regulator-Led Programs

To keep up with technological change in the financial sector and to help SMEs gain access to finance, regulators are relying on different approaches, such as innovation offices, regulatory sandboxes, and other creative methods. At the same time, many governments have introduced programs that encourage the use of digital financial products to support SMEs, to provide funds to enable SME leaders to engage in digital transformation of their businesses and many other initiatives.

The two most common innovative regulatory programs are the following:

- **Innovation Offices.** Typically established as a first step in the regulatory innovation process, innovation offices engage with FinTechs and other industry players to provide regulatory clarification as it pertains to innovative products and services these players wish to introduce in the market.
- **Regulatory Sandboxes.** Formal programs that test new digital financial products and business models with actual customers within a safe environment, subject to safeguards and oversight.

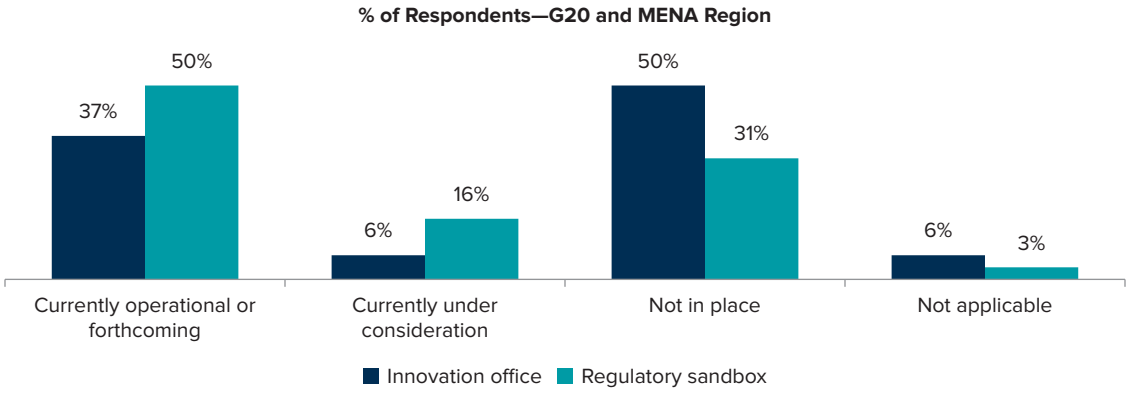
Based on the regulatory survey performed by the World Bank and CCAF, regulatory sandboxes appear to be more prevalent than innovation offices in the G20 and MENA countries, with 43 percent of responders saying that innovation offices are currently operational or are being considered in their jurisdictions, while 66 percent of responders saying that regulatory sandboxes are currently operational or are being considered in their jurisdictions (Figure 3.21).[131] It is interesting to note that 50 percent of regulators say that innovation offices are not in place in their respective countries. Upon closer inspection, G20 high-income countries are the ones mainly implementing innovation offices, followed closely by MENA high-income countries. However, regulatory sandboxes are prevalent in all countries, including the MENA upper-middle- and lower-middle-income countries (Figure 3.22).[132] (See Box 3.6 for a discussion of government and regulator-led programs in the MENA region.)

Innovation Offices

Innovation offices serve as a two-way information flow between the industry and regulators, supporting the development of appropriate approaches to regulatory innovation while simultaneously helping innovators understand the regulatory environments where they operate. Innovation offices are called by different names, such as Innovation Hub or Innovation Group; however, at their core, the innovation offices are all designed to facilitate the mutually beneficial flow of information between the regulator and the industry. The establishment of innovation offices has in many instances been the first attempt at engaging with FinTechs by regulators and is a particularly compelling initial option for capacity-constrained regulators in developing and emerging economies. They require no protracted changes to legislation or regulation, or the resource implications of these. Instead, the regulator can start small and simply provide clarification on the regulatory environment where innovators operate. This might include explaining the relevant regulations for the service the

FIGURE 3.21

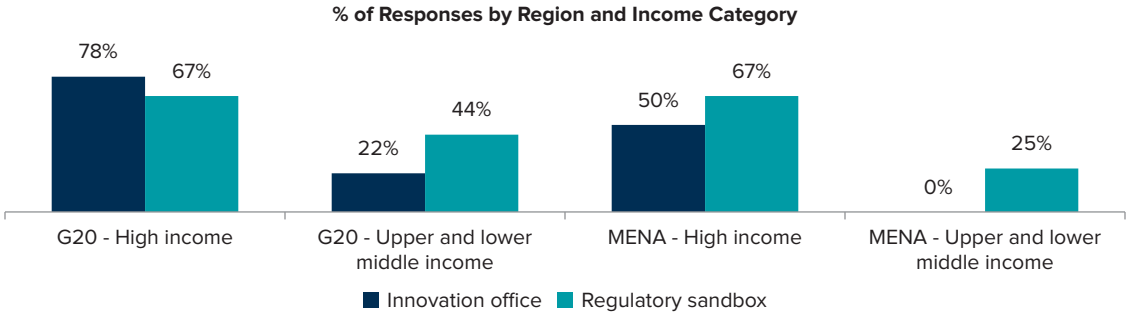
Prevalence of Regulatory Programs Among Regulators



Source: Cambridge Centre for Alternative Finance (CCAF).

FIGURE 3.22

Incidence of Regulatory Innovation by Jurisdiction—G20 and MENA by Income Category



Source: Cambridge Centre for Alternative Finance (CCAF).

FinTech wishes to introduce, providing guidance on whether they may need a license to do so, and if appropriate, explaining the licensing process.

Innovation offices provide the following benefits for regulators and FinTechs:

- **Reduced costs for FinTechs and consumers**—By providing a channel that enables innovators to engage with regulators to better understand the regulatory framework and regulatory requirements, innovation offices can help reduce regulatory uncertainty. This, in turn, can have significant positive outcomes for market development and financial inclusion by mitigating an often costly and time-consuming process of understanding applicable registration/ licensing, consumer protection, privacy, cybersecurity, AML/CFT and other regulatory requirements and setting up an adequate policies, procedures and processes to comply with relevant regulatory obligations.
- **Better informed policymaking**—Innovation offices are often being utilized to identify risks (and benefits) that innovative new financial services may present, and to highlight any implications for regulatory policy. These might include, on the risk side, gaps in regulatory parameters, issues of regulatory arbitrage and unclear regulation, money laundering, terrorist financing, fraud, and other illicit financing risks, which should be addressed and mitigated, and on the benefits side, potential to facilitate financial inclusion, increase financial sector efficiency/reduce operational or capital investment costs; or strengthen AML/CFT and anti-fraud measures, which should be supported and encouraged. In this way, innovation offices can facilitate an improved policy environment and significantly benefit financial inclusion, while helping to safeguard financial sector integrity. By way of example, Bank Negara Malaysia's Financial Technology Enabler Group (FTEG) has led a nationwide campaign to invite the public to provide input on areas causing difficulties and areas needing improvement in the delivery and consumption of financial services.

CASE STUDY: FCA PROJECT INNOVATE (UNITED KINGDOM)

One of the earliest regulators to embrace innovation and create an innovation office in the United Kingdom was the Financial Conduct Authority (FCA), which launched "Project Innovate" in October 2014. Unlike many other regulators, the FCA has both a statutory objective to promote effective competition in the interests of consumers and an AML/CFT mandate. Both sets of considerations have driven the FCA's initiative to promote innovation in financial services. Project Innovate began as a start-up with a small team, within the FCA but has grown commensurate with demand over the last four years to a large department of about 30 staff, encompassing a number of functions. The core initial function (entitled "Direct Support") includes:[133]

- Policy function—addresses unnecessary barriers to innovation while ensuring consumer protection and enhanced market integrity

- Engagement function—promotes awareness of FCA support and engages with domestic and international regulators on lessons learned and good practices
- RegTech function—explores the use of technology to overcome regulatory challenges
- "Advice Unit"—supports firms developing automated financial services models

Both new and established innovator businesses are able to access specialist support to assess how the FCA's regulatory framework may apply to their business. Such support includes help in navigating the licensing process and general guidance about the mechanics of the United Kingdom regulatory system and how it may apply to different business models and forms of financial services. Additionally, the FCA has introduced TechSprints, which combine both policy development and a forum (elsewhere sometimes called a hackathon) for developing innovative technology to address specified use cases, including AML/CFT use cases, in a concentrated, cooperative public-private environment. The impact of Project Innovate has been substantial. The direct support function alone has assisted more than 500 firms. The FCA observes that this has promoted more choice, variety, and outcomes for consumers in the financial services markets.

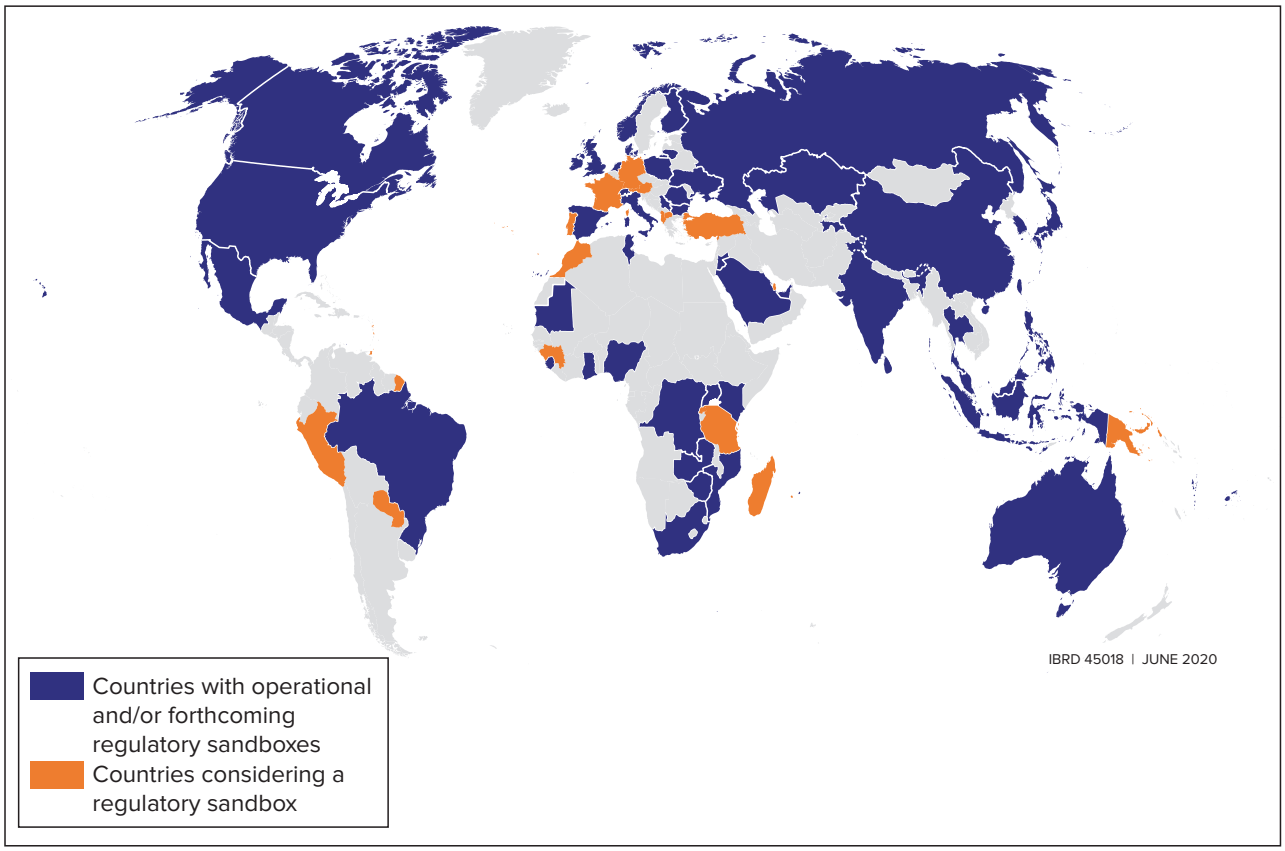
Regulatory Sandboxes

Regulatory sandboxes are programs that, depending on the model, allow FinTechs and other innovators and/or traditional financial institutions to test their innovative products/services on a small scale, under defined terms and conditions, closely supervised by regulators. The regulatory sandbox is set up and closely supervised by the financial regulator and allows for the "live" testing of innovations in a controlled environment, which may include the limited, time-bound flexible application of or exemption from certain regulatory requirements, such as consumer protection disclosure requirements or registration/licensing requirements, which may be deferred or implemented in stages.[134] Eligibility to enter a sandbox typically requires applicants to articulate the added value of their product/service, in terms of consumer benefit and true novelty, in a standardized format. This is cost-effective for participants and resource-effective for regulators. The regulatory sandboxes are operated by one or more primary financial regulatory authorities, with the day-to-day operations of the sandbox administered by a small team of dedicated staff to provide regulatory and practical guidance and prevent public harm. During testing, the sandboxed firms are required by the regulator to submit periodic reports on customer service, operational metrics, and business metrics. Currently, there are more than 50 regulatory sandboxes globally that are live or planned. Figure 3.23 provides an overview of the location of the regulatory sandboxes around the world.

Although there are differences across jurisdictions, regulatory sandboxes typically share the same design components. The key design components are summarized in Figure 3.24 below.

FIGURE 3.23

Examples of Regulatory Sandboxes by Jurisdiction



Sources: CGAP, DFS Observatory (2018), and UNSGSA FinTech Working Group and CCAF (2019).

FIGURE 3.24

Key Design Components for Regulatory Sandboxes

Intended Objectives

A few common objectives include competition, efficiencies through innovation, strengthening regulatory compliance, financial integrity and more recently, financial inclusion

Admission Criteria

Eligibility depends on the regulator's authority and legal framework. Some permit only FinTechs, while others only permit incumbents, and a few permits both types of firms

Participation Time Period

Can vary based on the regulators and type of product, ranging between 6 to 24 months, with 12 months the most common

Risk Protection Procedures

The sandbox places restrictions on the maximum number of customers and value of transactions, and participants may be required to put in place safeguards such as disclosure and compensation to customers in the event of test failure. Relevant AML/CFT obligations are applied

Regulatory sandbox models have evolved, and different variants of them are visible around the world. These models modify the different design components described above to adapt to their local regulatory frameworks. A few examples are as follows:

- ***Indonesia***—the Indonesia Financial Service Authority (OJK) has a hybrid regulatory sandbox, with tiered registration requirements that provide participating companies up to 1 year to apply for full licensing. In the interim, the OJK provides informal coaching to participants to help them graduate to full market access.
- ***Thailand***—the Securities and Exchange Commission (SEC) has launched a series of regulatory sandbox "verticals" that focus on different aspects of the financial sector, including investment advisors, trading platforms, and clearing and settlement processes.

Overall, regulatory sandboxes provide benefits such as reducing regulatory uncertainty and improving the communication between regulators and FinTechs. Moreover, testing in the regulatory sandbox can provide helpful data to potentially support regulatory or policy changes.

The biggest challenge for the launching of a regulatory sandbox is limited regulatory capacity. It is important for financial authorities to see if they have the staff capacity, expertise and resources to be able to implement and manage a regulatory sandbox. If this is not the case, the regulator may have to seek assistance/support from multi-lateral development banks and/or experts. As a result of limited regulatory capacity, there could be a poor selection of firms participating in the regulatory sandbox, or regulatory objectives and safeguards could be undermined, with resulting harm to customers or and/financial system integrity. Based on a joint survey in 2019 of regulatory agencies from 28 countries, the results revealed a significant variance among the regulators in terms of human resources committed, ranging from 1 to 25 full-time employees, as well as a wide range of financial resources dedicated, ranging from $25,000 to $1 million.[135]

Even though regulatory sandboxes have been widely adopted as an innovative regulatory initiative, they are not a panacea to evaluate FinTech innovations. Experience shows that most regulatory questions raised in connection with sandbox tests can be resolved by using more affordable methods such as innovation offices and 'test and learn'.[136]

Other Innovative Financial Regulatory Initiatives

Different innovative financial regulatory initiatives are being implemented around the world to help regulators better understand the impacts of digital technologies on SMEs and consumers and develop appropriate regulatory frameworks. For instance, an initiative sponsored by the Monetary Authority of Singapore (MAS) and the International Finance Corporation (IFC) is the API Exchange (APIX), which was launched by the ASEAN Financial Innovation Network (AFIN). APIX is a cross-border, open-architecture platform that enables financial institutions and FinTechs to connect through a cross-border marketplace. In this environment, FinTechs and banks can conduct collaborative experiments in a sandbox to facilitate adoption of APIs that have the potential to drive digital transformation and financial inclusion across the Asia Pacific region. Ultimately, the partnerships created between FinTechs and financial institutions can provide SMEs better access to finance.

CASE STUDY: LIFT INNOVATION LAB (BRAZIL)

The Central Bank of Brazil and FENASBAC (the National Federation of the Central Bank Employees Association) have created a modified version of the regulatory sandbox, which is similar to the multi-jurisdictional sandbox model described above, but which also has features similar to accelerator programs. The Laboratory of Financial and Technological Innovation, or LIFT, was launched in May 2018, as a "sectoral sandbox" to foster innovative technological solution prototypes for the Brazilian financial market.[137] LIFT provides an open architecture platform where FinTechs, private sector technology companies, and financial institutions can collaborate on new products in an environment outside the market and without consumers. According to the creators of LIFT, "The intention is to create a continuous process of proposition, appreciation and development of ideas to strengthen the innovation ecosystem in the financial system and to identify technologies and models that will be vectors of disruption in subsequent years."[138]

CASE STUDY: OJK INFINITY (INDONESIA)

A few jurisdictions have created FinTech "centers of excellence" that bring together FinTechs, regulators, experts, and academics to learn about the latest industry trends, conduct research and provide capacity building. For example, Indonesia's Financial Service Authority (OJK) launched the Innovation Centre for Digital Technology, most commonly known as OJK Infinity, on August 2018. The objective of OJK Infinity is to serve as a FinTech research center where business owners, enterprises, government officials, and academic institutions can join to collaborate in the FinTech sector. As stated by OJK's Commissioner, Wimboh Santoso, "The formation of this innovation center is to make a more friendly FinTech ecosystem in Indonesia and to encourage any business maker to build the digital financial system that will facilitate the society."[139]

CASE STUDY: FINTECH COUNCIL (GERMANY)

In Germany, the Federal Ministry of Finance created an initiative in 2017, the FinTech Council, to advise the Ministry of Finance on the risks and opportunities stemming from FinTech innovations. The FinTech Council facilitates dialogue between industry, research, and politics on practical aspects of the digital financial sector and has provided the Ministry of Finance with in-depth expertise that in turn, helps the Ministry future-proof financial regulatory frameworks. The FinTech Council is an inclusive group consisting of 29 members including representatives from FinTechs, banks, and insurance companies, as well as experts and researchers investigating the use of digital technology in the financial services sector. Supervisory bodies and ministries act as observers to the FinTech Council.

Digitization of SME Services by Governments

In addition to innovative financial regulatory initiatives, governments are digitizing their own services, which can have potential significant benefits for SMEs. For example, a number of countries in Africa are offering digital asset registries for SMEs that can help them gain access to finance. Another example is how blockchain/DLT is being explored for land title and registry by various jurisdictions around the world. Using blockchain/DLT creates transparency in land ownership records, which can make it easier to use as collateral by SMEs to qualify for loans.

BOX 3.6

Government/Regulator-Led Programs

SPOTLIGHT ON THE MENA REGION

Innovation offices, regulatory sandboxes and other innovative financial regulatory initiatives are becoming more prevalent in the MENA region, as regulators are seeing how these programs are benefiting other countries around the world. Regulators in Malta, Morocco, the United Arab Emirates, and Bahrain have set up innovation offices, while regulatory sandboxes are in place in Egypt, the United Arab Emirates, Bahrain, Jordan, Kuwait, and Malta. Below is a case study of Jordan's regulatory sandbox.

CASE STUDY: CENTRAL BANK OF JORDAN REGULATORY SANDBOX (JORDAN)

In April 2018, the Central Bank of Jordan created the regulatory framework for a Fintech Regulatory Sandbox to support FinTech innovation, encourage competition, and increase effectiveness, efficiency, and security without undermining the integrity and stability of the financial system and while protecting the data of financial consumers.[140] In January 2019, it launched the Innovation Lab as an incubator for entrepreneurs and innovators. To date, three applications have been accepted, out of a total eight submitted. The regulatory sandbox focuses both on developing innovative solutions and on building the capacity of participating entrepreneurs through specialized training courses and workshops designed by the Central Bank of Jordan and its partners. This hybrid approach objective is somewhat unusual for a regulatory sandbox. So far, the Central Bank has shared the following lessons learned:

- Cross department activities and contacts must be clear and well-documented.
- There is a need to be clear and transparent with FinTechs regarding the framework, structure, and main expectations.
- Having a dedicated team is highly recommended to follow-up with the market.

Financial accelerators are also emerging in the region, with GCC countries taking the lead in this area.

CASE STUDY: HUB71 AND THE ADGM DIGITAL LAB (UNITED ARAB EMIRATES)

Launched in March 2019 as a flagship initiative of the Abu Dhabi government's AED 50 billion economic accelerator program, Hub71 is a global tech hub located in Abu Dhabi Global Market (ADGM), which brings together a vibrant and diverse community of technology company founders, investors, and advisers with the aim of helping FinTech startups grow their businesses through access to several platforms. Hub71 provides access to global accelerators including Plug & Play and Techstars, as well as funding schemes that cater to startups and scale-ups at different life cycles, as well as subsidies for office space and housing. Hub71 also provides

FinTech startups an opportunity to access global markets through Mubadala Investment Company's (Abu Dhabi's sovereign wealth fund) network of portfolio companies. Additionally, FinTechs can access ADGM's Digital Lab, a digital regulatory sandbox where they can experiment and develop innovative solutions with financial institutions and investors in an online environment, under the guidance and oversight of participating regulators. The Digital Lab moves ADGM's regulatory sandbox from analog and local (the original ADGM RegLab launched in 2016) to digital and global. In 2019, ADGM selected four FinTechs for the Digital Lab from a pool of 14 applications with market-ready solutions focusing on areas including sustainable finance and the API economy, which will be tested in Abu Dhabi and the wider UAE market. The selected FinTechs included local and international companies (from Switzerland and Luxembourg). To accelerate the adoption of FinTech innovation and transformation of the financial services industry, ADGM organizes Innovation Challenges yearly inviting global FinTechs to help financial institutions address their pain points with funding from ADGM.

Public-Private Partnership (PPP) Programs

As part of their digital transformation strategies to leverage the extensive benefits of technology innovation in every aspect of their economies, governments in the G20 and the MENA region are developing public-private partnership (PPP) programs to help design, develop, and implement programs that can quickly scale up in their respective countries. PPP programs vary greatly in how they are structured. Accordingly, this section presents case studies representing only some of the different types of PPP programs that have been established in various countries.

CASE STUDY: SME GO DIGITAL PROGRAM (SINGAPORE)

One of the most comprehensive and well-established digital transformation programs for SMEs is the SME Go Digital program set up by the Singapore government, in partnership with telecommunications, financial services, and technology providers in the country. Launched in 2017, the program aims to help SMEs use digital technologies and build strong digital capabilities to seize growth opportunities in the digital economy. A study performed in Singapore in 2019 shows that the use of digital technologies such as e-commerce, digital payments, AI/ML, and Big Data analytics can increase SME's value add and productivity by 26 percent and 17 percent, respectively.[141] The SME Go Digital program makes it very easy for SMEs to go digital by providing a step-by-step guide on how to adopt digital solutions at each stage of their growth by using Industry Digital Plans (IDPs). The IDPs provide a roadmap to digitalization for SMEs in a particular industry or sector. To date, the Singapore Infocomm Media Development Authority (IMDA) has rolled out 10 IDPs, which consist of retail, logistics, environmental services, food services, security, hotel, sea transportation, wholesale trade, and media. Overall, the SME Go Digital program has supported more than 15,000 SMEs and numerous small businesses have been able to significantly increase their productivity and profitability by digitalizing their operations.

CASE STUDY: FINANCE DIGITALIZATION STRATEGY (JAPAN)

In 2018, the Japanese Financial Services Agency (JFSA) put in place the Finance Digitalization Strategy, a comprehensive plan to implement innovative digital services for businesses and improve the lives of consumers. While not all of the initiatives under the strategy focus on SMEs, several initiatives are intended to improve access to finance for SMEs, including the FinTech Innovation Hub, FinTech Support Desk, and FinTech Proof-of-Concept Hub, as well as promoting the use of open APIs. The JFSA reviews its strategy and makes necessary adjustments on a regular basis in order to adapt to the rapidly changing environment.

CASE STUDY: MONSHA'AT FUNDING PLATFORM (SAUDI ARABIA)

Established in November 2019 by the General Authority for Small and Medium Enterprises "Monsha'at", the Monsha'at Funding platform is a digital platform that connects SMEs and entrepreneurs who are looking for funding from different financial institutions and development organizations. Funding can be provided in different forms, including debt, equity, guarantees, and other types of funding. The platform's objectives are to enable SME access to finance, lower transaction costs for financial institutions providing capital to SMEs, and increase financial inclusion in the rural areas. The funding platform has more than 25 banks, development organizations, and other non-bank financial institutions as funding partners; to date, it has received more than 250 funding requests.

CASE STUDY: GLOBALLINKER (INDIA)

GlobalLinker, an India-based FinTech startup founded in 2015, offers a novel approach to the digitalization of SMEs by providing a platform that connects SMEs globally so that they can learn from each other, digitally transform their businesses, and partner with government institutions and large corporations to help fund their transformation. Currently, more than 270,000 SMEs from over 150 countries actively participate. GlobalLinker's main objective is to help small businesses to become digital by providing each business the ability to easily create its own e-commerce site and digital product catalogue for free. By using an e-commerce storefront created through GlobalLinker, many businesses have seen a significant increase in their sales. GlobalLinker can be an efficient way of offering government schemes and programs to deliver value for small businesses. For example, GlobalLinker is in advanced discussions with the State of Odisha in India, supports the use of Women Self Help Groups (SHGs), where groups of women come together to carry on a certain commercial activity. Odisha now has 600,000 SHGs that together involve approximately seven million women. Assuming agreement is reached, GlobalLinker would progressively create digital storefronts for these 600,000 SHGs and help aggregate their raw material purchases as well as to support them through packaging, marketing, and other capabilities.[142]

The Impact of COVID-19 Pandemic on SMEs and Potential of Digital Financial Services as a Response

While the COVID-19 pandemic will have a generalized impact on business activity and employment in all countries, it will likely have a disproportionate effect on small businesses. SME financing constraints are typically exacerbated during crises. When bank lending is reduced, MSMEs tend to be more vulnerable and affected than larger corporations and credit sources tend to dry up more rapidly for small firms than for large companies during economic downturns. The COVID-19 pandemic will display similar circumstances, making it more difficult for SMEs to access financing.

Governments around the world are mobilizing a wide variety of measures to support SMEs survive during this crisis. Support measures include direct grants to businesses as well as different debt financing instruments, such as concessional loans with delayed repayments,

reduced/no interest loans, and credit guarantee schemes. In addition, different government programs are supporting firm employees through wage subsidies, labor training subsidies, and subsidies for employee sick leave. Other types of support include payroll, social security and VAT tax reductions and deferrals. While current government measures are steps in the right direction, the speed of execution is essential to provide the assistance that SMEs need.

Digital financial services and FinTech solutions could be leveraged to ease SME access to financing. Digital technology was not as ubiquitous in the financial services industry during the 2008-09 global financial crisis as it is today. It now offers an unprecedented opportunity to mitigate the impact of the COVID-19 crisis on SME financing. Simplified loan application processes and use of alternative data for credit decision making could be leveraged by state development banks to reduce turn-around times of SME loans.[t] Additionally, state development banks could leverage online platforms for conducting reverse factoring transactions that can facilitate supply-chain finance to SMEs and shorten the maturity of the payments involved.[u] Finally, while there are several initiatives of digital services providers that are offering help to small businesses,[v] tech-focused firms could be included in government emergency funding programs.

Digital lending is also playing an important role in providing access to needed financing for SMEs during the pandemic. Governments around the world have implemented relief schemes, for example bank loans to small businesses. Digital lending platforms provide a few advantages over banks in this situation, such as faster application, online review and approval processes and through mobile devices. Despite their ability to move more quickly than banks, in some G20 countries digital lending platforms are struggling to be admitted to the relief schemes due to restrictive financial regulations. Only a few of the largest digital lending platforms have been approved to aid in this part. For example, the U.S. Treasury has provided approval to PayPal, Square, Kabbage, and Funding Circle to provide small business loans through the U.S. Small Business Administration's Paycheck Protection Program. However, in other parts of the world, digital lending platforms have built extensive partnerships with banks to disburse loans. For instance, MYBank and Alipay, in partnership with 100 local Chinese banks, are offering small merchants and street vendors in Wuhan "Zero Contact" loans, which are fully digital with no human interaction. The digital bank has already disbursed loans to more than 350,000 merchants and is waiving interest rates for the first month.[143]

The digital transformation of SMEs is proving to be a significant advantage during the crisis, with online businesses experiencing less severe disruption than offline businesses. Depending on the sector, having a digital presence translates into lower operating expenses and the ability to continue selling products online even during the lockdown. Many businesses are being encouraged to digitalize their operations as a way to survive in the crisis and be in a better position during the recovery. As covered in the previous section, GlobalLinker is providing practical advice to SMEs on how to set up their own e-store as well as how to develop a digital strategy for the future.

Although it is too early to observe the impact of the crisis on Fintechs, some policymakers and government institutions are supporting FinTechs given their important role in helping small businesses and consumers. To help FinTechs survive the crisis, some governments have implemented grant schemes to support these young firms. For instance, the Monetary Authority of Singapore (MAS), together with the Singapore Fintech Association and AMTD Foundation launched a S$6 million Fintech Solidarity Grant to help Singapore-based FinTechs maintain their operations and enable them to continue to innovate and grow.[144] In South Korea, the government announced that it would temporarily ease regulations on FinTech and ten other industries in an attempt to jumpstart its economy amid the coronavirus outbreak.

Post-crisis, FinTechs enabled by AI and Big Data analytics are expected to continue to increase with higher demand from financial services for technology to move towards digital-only interaction. Adoption will be uneven by countries but represents an opportunity to potentially speed up digitalization efforts.

In all cases, it is important that financial institutions, FinTechs, and governments continue to implement risk-based AML/CFT safeguards to combat money laundering, terrorist financing, fraud, and other illicit financial activities, and ensure that benefits and loans get into the hands of eligible recipients and stay out of the hands of those who would take advantage of the pandemic crisis to abuse the financial system.

[t] An example is Canada, where the Business Development Bank of Canada is availing online small business loans below certain threshold with 48 hour-turn-around time.

[u] For example, Mexico has gained significant experience in this area.

[v] In the US, many tech-based firms are scaling support to MSMEs hit by the crisis through special programs and initiatives.

CHAPTER 4

CHALLENGES AND RISKS TO DIGITAL SME FINANCING

While digitalization is disrupting the financial sector and providing opportunities to expand access to SME finance, there are challenges and risks that need to be addressed, particularly with respect to the digitalization of SMEs, and the adoption of new digital financial products by SMEs. Some of the issues are more prevalent in those emerging markets that have less-developed digital infrastructure and systems/processes in place. Many of the same challenges and risks apply both to consumers and SMEs.

Challenges and Risks Related to the Digitalization of SMEs

Low Digital/Financial/Business Literacy

Low digital, financial, and business literacy are three distinct areas that are hindering SMEs from adopting digital financial products and digitally transforming their operations. Most SMEs currently lack the capabilities to understand the usefulness and relevance of these products and why they should use digital tools in their businesses. Higher financial literacy is essential for SME managers to be able to analyze costs, benefits, and risks associated with potential funds in choosing funding sources. For instance, research in Sri Lanka in 2019 demonstrated that financial literacy is a predictor of access to finance and understanding financial risk.[145] The study also found that there is a direct positive effect of financial literacy on the sustainability and financial performance of small businesses. **Business literacy also is critical for small and medium enterprises, including know-how for** managing employees, structuring operations, managing working capital, and investing in research and development (R&D). Finally, **digital literacy combined with financial literacy is necessary for business owners to understand the benefits of digital financial products,** and how undergoing a digital transformation can enhance their profitability, particularly as digital technologies have become embedded in all sectors of the economy and all parts of our lives. **For women-owned SMEs, low digital, business and financial literacy are major challenges** since women tend to have lower education levels than men in some emerging markets. Also, as noted earlier women tend to have lower access to resources due to social and cultural sanctions. Moreover, low digital literacy for women corresponds with lower access to or control of technology, including mobile phones and the Internet.

Finding Qualified and Trained People with the Right Digital Skills

Hiring people with the right digital skills is a major challenge for SMEs and startups. Although off-the-shelf software packages and cloud-based software solutions make it easier for SMEs to adopt these products without having an extensive IT background, employees and management still must understand how the software solutions work. This knowledge enables employees and management to handle any software customizations required for their businesses, and to clearly articulate how to make any modifications that may be needed. Conversations with a broad set of FinTech startups in Southeast Asia revealed that the biggest barrier to growing and scaling up was the lack of people who had appropriate digital and business skills. In many cases, these startups had to hire more expensive resources from other parts of the world. An additional challenge is retaining qualified staff.

A related risk is the loss of employment as SMEs digitalize their operations and thus may need fewer employees to run their businesses. This risk can be mitigated through training and reskilling.

Unreliable/Limited Internet Connectivity and Usage

To take advantage of digital financial products and the benefits of the digital transformation of businesses, it is critical to have reliable Internet connectivity (ideally broadband connectivity), whether by using a computer or mobile phone. Without reliable Internet service, it is almost impossible for SMEs to make use of digital financial products and to take advantage of having an online presence. This challenge is more prominent in emerging market countries and for SMEs from vulnerable and underserved groups, and if it is not addressed, it could exacerbate economic inequality. According to GSMA, 75 percent of the population in high-income countries are connected to the Internet via mobile devices; however, only 40 percent of the low- and middle-income population are connected. If current trends continue, more than 40 percent of the population in low- and middle-income countries (LMICs) will still be offline by 2025.[146] At the end of 2018, 750 million people did not have mobile broadband coverage, and 40 percent of this population lived in Sub-Saharan Africa.[147] The good news is that the coverage gap has declined by more than 50 percent since 2014. However, a more pervasive problem is that even though there may be connectivity in an area, it does not necessarily translate into usage of the Internet. In fact, GSMA calculates that the usage gap globally is 3.3 billion people, 4 times greater than the coverage gap.[148] For instance, in South Asia, while the coverage gap is 220 million, the usage is gap is 1 billion people; this means that even though most people have coverage of mobile Internet, very few are using it.

In addition to the lack of literacy and digital skills, the biggest the barriers for adoption of mobile Internet include the following:

- Affordability—data and device prices may be higher in some regions than others
- Low awareness—according to GSMA, 21 percent of people living in LMICs are not aware of the Internet, with women having lower awareness than men (75 percent of women, compared to 83 percent of men).[149]
- Safety and security

Women-owned SMEs in emerging markets also experience significant barriers due to unreliable/limited Internet connectivity. On average, women are 10 percent less likely to own a mobile phone than men, and 26 percent less likely to use the Internet due to its high price.

Lack of Regulation, and Restrictive and Legacy Regulations

Financial regulations can play an important role in the development and growth of responsible digital financial products and enable the introduction of responsible digital solutions that can help SMEs establish an online presence. Some jurisdictions do not apply their financial regulation to FinTechs, in the belief that not having to comply with potentially burdensome prudential rules and other regulatory objectives may facilitate faster development of innovative products and services. However, lack of appropriate prudential and consumer protection regulation increases the risks associated with innovative financial services/products that such regulation is intended to mitigate, undermining public confidence and adoption and hindering scalability. Most FinTechs prefer to have clear regulatory frameworks in place, not only to support public trust and adoption/scalability, but also so that they know what laws and policies they need to comply with to run their businesses. Importantly, to the extent that governments fail to apply appropriate risk-based AML/CFT requirements to financial activities conducted by FinTechs, they also create an opportunity for money laundering, terrorist financing, fraud, and other illicit financing abuse of the financial system, which, among other consequences, could limit foreign investment and remittances, impede correspondent banking, and restrict economic growth. Conversely, some jurisdictions apply highly restrictive regulatory frameworks to FinTechs, which may make it difficult for them (and non-bank financial institutions in general) to offer DFS to SMEs. For example, in some countries, FinTechs offering digital lending products must be registered and regulated as banks, and in others, equity crowdfunding platforms are regulated as securities issuers and have to comply with general securities laws, which can discourage initiatives in this area.

Lack of Data Privacy/Data Protection

Lack of data privacy/data protection is a major risk that SMEs face as they begin using digital financial products and digital solutions to transform their businesses. As part of the process of obtaining a digital loan, SMEs are often required to supply documents, such as financial statements. If the business is already online, lenders may also collect data such as digital bill, rent or utility payments, other digital transactions, and information from many other online sources to develop credit risk models for assessing the credit risk of the SMEs. However, if not properly protected, the data supplied by SMEs to alternative lenders could be shared with unauthorized parties or used for purposes other than the original intention. One major consequence of such potential misuse of data is that the SME's may lose their trust in using digital financial products and digital solutions.

Financial and Gender Exclusion due to Potential Bias in Data

Inadequate data privacy and data protection, as well as poor or non-existent recourse in digital financial services, can affect women-owned SMEs disproportionately, given their typically lesser mobility and more limited technological and financial literacy.[150] The advent of Big Data Analytics and AI/ML to analyze alternative data for digital lending and insurance products may lead to financial exclusion if not properly managed. FinTechs, BigTech firms, and, increasingly, financial institutions are using Big Data analytics and AI/ML to analyze structured and unstructured data to develop credit risk assessment models for determining the ability to pay of SME borrowers, and offering them digital lending products. Similarly, InsurTech firms analyze vast amounts of data using AI/ML algorithms to develop customized digital insurance solutions for SMEs and individuals. However, AI/ML algorithms used in digital lending and digital insurance are only as fair and effective in determining risk as the data they are trained on. Bias in training data, such as gender, race, or ideological biases, as well incomplete or unrepresentative datasets, will limit AI/ML's ability to produce objective results and can potentially exclude groups of people and/or businesses from accessing digital lending and insurance products without a legitimate basis.[151] The risk of bias is exacerbated by the lack of transparency as to how FinTechs and BigTech firms use alternative data pertaining to SMEs in developing alternative credit risk assessment models for them. AI/ML algorithms often operate in a "black box" that does not provide adequate information as to how they gather and use data to identify prospective customers, and create credit ratings and scoring used in the credit approval process.[152] This lack of transparency makes it more difficult to examine solutions for potential discrimination and to establish effective safeguards.

Lack of Official Identity

A major obstacle to financial institutions providing funding to SMEs is the SMEs' lack of identity documentation for businesses, especially those that are not registered as legal entities in the country where they operate. Under the global AML/CFT standards and countries' own national AML/CFT legal frameworks, financial institutions must conduct CDD—including customer identification/verification, identifying the beneficial owners (the natural persons (individuals) who own and/or control the business) and understanding purpose and nature of the business relationship—when opening an account or providing a loan or other financial services to a customer. For SMEs and other entities, this includes making sure that the business is real, legitimate and is not conducting any illegal activities or activities that may not be prohibited but are unacceptable under the financial institution's risk management policies. However, without registration and an official legal entity identification number and valid documentation containing this identity evidence, which registration typically provides, it is difficult for financial institutions to verify information about a company and comply with CDD requirements. For microenterprises and/or sole proprietors, the customer identification/verification and other elements of the CDD process for the entity can be conducted, using the identity documents of the owners/managers. However, these individuals may also lack official identity documents (or digital credentials), preventing financial institutions from providing capital to their businesses. To an even greater extent than men, women lack official identity documents needed to open bank accounts and start new businesses. According to the World Bank, more than one billion adults globally lack an official identity, including a disproportionate number of women. In fact, it has been estimated that over 45 percent of women in low-income countries lack official identity documentation, compared to 30 percent of men.[153]

Cybersecurity Risks

As SMEs digitalize their operations, they face an increasing risk of cyber incidents—especially if they have not implemented adequate data protection and cyber security. Although SMEs may obtain "off-the shelf" data protection and cyber security solutions from Internet security service providers, these still require some investment, as well as a basic level technical capacity to use and maintain the security solution. In addition, many new FinTechs that offer DFS to SMEs and digital software solution providers may themselves be vulnerable to a cyber incident, which may compromise the FinTech's systems and result in the release of sensitive data about SME customers to unauthorized users. Since FinTechs mostly rely on relatively new digital platforms provided by relatively immature FinTech firms, they may be more vulnerable to cyber-risk than traditional banks and larger businesses. The extent of this cyber risk is highly dependent on the sophistication of the technology the platform uses to store client information and the robustness of the FinTech firm's cybersecurity programs. Due to their reliance on third party providers, such as cloud computing and online data storage, FinTech firms also may be vulnerable to operational disruptions stemming from their outsourced services. The 2018 Hiscox small business cyber-risk report showed that seven in ten businesses globally are unprepared for a cyber incident.[154] **Small businesses are disproportionately vulnerable, because they are less likely to have strategies and technology in place to identify a range of potential incidents, detect an incident early, and repel it and/or mitigate the damage.** Due to the growing threat of

cyber incidents, the market for cyber insurance for SMEs is expected to grow significantly over the next few years as businesses look for ways to protect their operations and data from these potential incidents.

The cost of cybercrimes and cyber incidents is high: it is estimated that worldwide cybercrime costs $600 billion a year, or 0.8 percent of global GDP, up from $500 billion in 2014.[155] Cybersecurity risks and damages have become commonplace and it will continue to grow for a variety of reasons:[156]

- Cybercriminals are adopting new and ever-evolving incident technologies
- Cybercriminals are becoming more financially sophisticated, making it easier to monetize their exploits
- Many new Internet users are in countries with a weak cybersecurity legal framework and culture

While open banking may help SMEs gain more transparency of their financial situation and help manage their finances more effectively, it can also lead to data security risks. Open banking expands the attack surface and can increase the likelihood of data breaches that can potentially expose SMEs' sensitive information and lead to subsequent financial losses.[157] These risks vary depending on the open banking model, with payment initiation services that entail the transfer of funds having greater risk than data aggregation services.

Disclosure Risk[158]

FinTechs and BigTech firms offering DFS may provide unclear and/or standardized disclosures on their products, compared to traditional financial institutions, which can lead to a loss of trust by SMEs. For instance, some digital payment platforms may not appropriately disclose their transaction fees, resulting SMEs unknowingly paying higher fees than expected. In addition, not all digital lending platforms appropriately disclose the loan interest rates, as there may be hidden fees and charges, and loan terms may be unclear or incomplete. Disclosure practices in relation to equity crowdfunding also vary considerably, making it difficult for SMEs to develop a high level of trust to using these platforms to obtain debt and equity financing.

Risk of FinTech Failure due to Operational Issues

Since most FinTechs offering DFS are relatively young (in most cases, less than 10 years old) and have not yet achieved profitability, there is a risk they may become insolvent and declare bankruptcy. Recession or an economic and financial crisis could also potentially lead to FinTech failures. Although it is still too early to tell, the COVID-19 pandemic could have a major negative impact on FinTech firms globally and may lead to many failures, especially of FinTechs that have limited capital and are based in emerging markets. Most FinTechs have been founded during a period of strong economic activity and very few have experienced a recession. In the event of a FinTech failure, SMEs that were using or planned to use the FinTech's products may have to pay higher borrowing and/or transaction costs from traditional financial services providers. If widespread or otherwise having significant negative impact, firm failure could potentially lead to a loss of trust in digital financial products. FinTech failures have been observed in China, where numerous P2P lending platforms have become insolvent over the last few years, leading to losses for both investors and borrowers (consumers and SMEs).

Financial Integrity Risks of Digital Channels

DFS may increase potential money laundering and terrorism financing risks, but need not do so, if subjected to effective, risk-based AML/CFT regulations. DFS has increased the number of non-bank players that are providing financial products and services and has made it easier to conduct remote (non-face-to-face) transactions, as well as cross-border transactions in near-real time. These factors may make transaction monitoring and identifying and reporting suspicious transactions more challenging for financial institutions, and present obstacles for public authorities seeking to identify, trace and recover illicit proceeds and prevent money launderers, terrorist financiers and fraudsters from abusing the financial system. Some FinTechs, while reshaping the financial services sector, may not have strong regulatory compliance capacity or a robust compliance culture. In addition, their activities may be outside the scope of banking sector regulation and not yet subject to appropriate risk analysis and effective, risk-based AML/CFT requirements. As a result, regulatory gaps may provide an opportunity for regulatory arbitrage, potentially distorting competition and increasing potential risk for financial crime.[159] Also, as more digital channels link greater numbers of SMEs to the regulated financial system, regulatory supervision and examination resources and capacity may be stretched, increasing the risk of money laundering through new financial service providers, with diverse customer bases.

Impact of Large E-Commerce Platforms

Large e-commerce platforms may impact SME digitalization. For example, Amazon currently captures

more than half of all online retail sales in the United States and approximately 14 percent of worldwide online retail sales.[160] Alibaba currently captures 53 percent of all online retail sales in China, and more than 55 percent of all online retail sales globally.[161] The dominant position of Alibaba, Amazon and other large e-commerce marketplaces may impact how merchants utilize smaller e-commerce platforms.

Regulatory Hurdles Related to the Partnership/ Collaboration between Banks and FinTechs

Regulatory obstacles may restrain the partnership/ collaboration between FinTechs and banks, potentially limiting scale up of digital financial services and products. Banks and FinTechs have been collaborating and forging partnerships in several areas where each has a comparative advantage. However, financial regulations in jurisdictions that have not adopted open banking frameworks may prevent banks from allowing FinTechs to access their technology stacks or customer data. At the same time, financial regulations often do not provide adequate clarity on which firm (bank or FinTech) has regulatory responsibility for complying with customer-facing requirements when offering digital financial products through a collaboration between FinTechs and banks. In addition, regulatory and contractual legal frameworks may not provide clarity or substantive recourse with respect to other liability issues related to bank-FinTech partnerships or other forms of collaboration.

Challenges and Risks Related to Digital Financial Products for SMEs

Digital payments, digital lending, and equity crowdfunding products pose challenges and risks that are specific to each type of financial product.

Digital Payments

Fraud and theft are important risks to consider for SMEs that adopt alternative and digital payment methods. Digital solutions provide greater connectivity but could also expand the areas of potential vulnerability that hackers can exploit, especially the client-facing applications using customer data and IoT-connected devices. Theft of customer personal information as well as fraudulent transactions may result from potential weak links in the network.

The use of QR codes opens new possibilities for fraud, as scammers have replaced the legitimate QR codes created by merchants with fake ones embedded with a virus to steal customers' personal information. This issue is more prevalent with static QR codes that contain fixed information that can be easily copied and replaced with a fraudulent code. Another factor that contributes to fraud is the fast speed of digital transactions, which may make it difficult to seek any recourse.

Since most digital payments are instant, fraudsters may be able to withdraw funds before the fraudulent activity is spotted. Without appropriate recourse mechanisms in place, it would be difficult to obtain your money back. As discussed in Section 3, push payments can increase operational efficiency for merchants due to automatic reconciliations, as well as attract new customers. However, authorized push payment fraud may occur, where fraudsters deceive consumers at a business to send them a payment under false pretenses to a bank account controlled by the fraudster.[162]

Lack of interoperability between payment system providers can be a major roadblock for the scaling and mass adoption of digital payments by SMEs. Interoperability refers to the ability of different IT systems, software and devices to access, exchange and use information seamlessly in real-time, so that all participants can operate across all systems. Without interoperability, SME merchants may have to pay higher costs to be able to accept multiple types of digital payments, since each type only operates within its own network, or may be limited in the types of digital payments it is able to accept. Although examples of non-interoperable payment systems from Alipay and WeChatpay have been able to successfully scale up in China, these systems are the exception to the rule. By having an interoperable payment system, SMEs can accept a wide variety of digital payment options without having to use different POS terminals. The result enables payments from customers using different mobile wallets or credit/debit cards, improving customer experience and lowering operating costs for SMEs.

High transaction processing fees is an additional challenge affecting the adoption of digital payments by SMEs. Some DFS providers (e.g., branded debit/credit card networks, some mobile network operators (MNOs), and some FinTechs) charge high fees for processing digital payments transactions, which discourages SMEs from adopting those digital payment methods. FinTechs are realizing that digital payments are a low-margin, high-volume business, and that to make a profit, they need to

offer additional products and services that complement digital payments, rather than charge high transaction processing fees.

Digital Lending

There are a number of challenges and risks specific to digital lending products:[163]

- **Over-Indebtedness of SMEs**—some digital lending products offered by alternative lenders may trap SMEs in an expensive cycle of re-borrowing. These lenders may also make loans without sufficient information on the SME's ability to pay resulting in potential over-indebtedness.[164] Some digital lending products offered have been designed to benefit lenders more when SME borrowers do not pay their loans or are late instead of paying on the original terms. The following observed practices by some alternative lenders exacerbate this behavior:[165]
  - Limited analysis on debt capacity and SME borrowers' current repayment capacity
  - Inappropriate financing products that maximize the initial loan offering beyond the SME's needs
- **Non-Aligned Incentives for P2P/ Marketplace Lending Platforms**—Marketplace lending platforms primarily follow an agency model, where the platform approves new loans to generate fee revenue, but it does not bear the credit risk of these loans because they are essentially an intermediary. As a result, there may be incentives for platforms to originate high-risk loans in order to be able to charge higher fees to higher-risk borrowers or to investors.
- **Lack of Credit Information Sharing**—In many jurisdictions, alternative lenders such as FinTechs, BigTech companies, and other non-bank players are not required to report their SME borrowers' loan performance to credit reporting service providers.[166] This issue is intensified by the inability of alternative lenders to access credit reporting services or their unwillingness to share proprietary client data due to potential concerns regarding competition. Therefore, many alternative lenders do not adequately report loan repayment information to major credit bureaus or consult credit bureau data when underwriting a loan.[167]
- **Lack of Recourse Mechanisms for Borrowers**—In some cases, digital lending platforms do not provide clear guidance on what SME borrowers can do if they have any issues with the digital loans or if they want to file a complaint. The lack of recourse mechanisms can erode trust, which is essential for the scale up and higher adoption of digital financial products.
- **Variable Quality of Credit Risk Assessments**—An important part of the digital lending process is the credit risk assessment performed by the digital lending firms on potential borrowers. FinTechs and BigTech companies often use alternative data sources to develop their proprietary credit risk models using AI, ML, and Big Data analytics. However, there may be risks associated with these models, such as the quality of data to assess credit risk is not comprehensive, which can result in the exclusion of certain types of SME borrowers.
- **Fraud or Malpractice by the Platform**—Perhaps the biggest risk to the future growth of the digital lending market is the potential for collapse of large platforms due to fraud and malpractice.[168] As covered earlier, one of the largest cases of fraud to date was Ezubao, a China-based P2P/Marketplace lending platforms, which ran a Ponzi scheme and stole more than $4.6 billion from borrowers and investors.

Equity Crowdfunding

The adoption of equity crowdfunding has been slow and uneven across different jurisdictions around the world. The lack of adequate investor protection and highly restrictive regulations are two main challenges that are discouraging investors from participating in equity crowdfunding offerings. In addition, there are specific challenges that are hindering broader adoption:

- **Lack of Established Secondary Markets**—without having established secondary market to resell crowdfunding shares, investors find it difficult to participate in these offerings since there is little to no liquidity.
- **High Compliance and Logistical Costs**—there are concerns that dealing with a large number of small shareholders will significantly result in higher than normal compliance costs and pose logistical challenges for business owners.

CHAPTER 5

POLICY OPTIONS FOR FOSTERING INCLUSIVE DIGITAL SME FINANCE

New digital technologies can help to close the SME finance gap by enabling smaller firms to tap into alternative sources of funding thanks to the data generated by their digital footprint. SMEs' own digital transformation can reduce their operational costs and increase their productivity. Digitalization also enables the introduction of new products and services, as well as a wider incorporation of SMEs into the formal economy, which can lead to further opportunities for funding.

The COVID-19 outbreak has made access to financial resources by SMEs especially urgent, as SMEs face both a sharp drop in demand and a sudden temporary lockdown of business activity. While in many cases, addressing this issue will involve public resources, facilitating the role of digital financial services and accelerating the digitalization of SMEs has become much more pressing.

The increasing access to markets and new business models offered to SMEs by e-commerce and the sharing economy, together with data-driven business opportunities derived from data sharing in open banking frameworks, represent key enablers for digitalization.

However, there are some challenges that are constraining the full potential that existing technologies could bring to increase SMEs access to finance. Among the key general challenges identified: the low levels of financial, business, and digital literacy, limited Internet connectivity and usage, gaps in or poor fit with current regulatory frameworks, the lack of adequate data protection, financial and gender exclusion, lack of trustworthy evidence of official identity, cybersecurity risks, the risk of failure of FinTechs, consumer protection/disclosure risks, money laundering, terrorist financing, fraud, and other illicit financing risks, and regulatory and practical obstacles to collaboration between FinTechs and banks.

There are also some specific challenges and risks that affect particular products. Namely, in the case of digital payments: risks of fraud, lack of interoperability of different systems, or high costs could entail major roadblocks for the adoption and scaling of digital payment solutions. In the case of digital lending, the main challenges identified are: over-indebtedness of SMEs, the lack of transparency, inadequate incentives in marketplace platforms, the lack of credit information sharing, the quality of credit risk assessments, the lack of recourse mechanisms for borrowers and the potential for fraud or malpractice by the platform. For equity crowdfunding, the main challenges identified are the lack of established secondary markets and high compliance and logistical costs.

To help tackle these challenges, building on the information in this report and previous work by G20 GPFI, World Bank, and other multilateral institutions[169], this chapter extracts key learnings and propose policy options that could lead to a conducive environment that facilitates access to finance for SMEs through digital technologies. The policy options have been organized in three broad areas, and ten underlying areas.

A. Develop a strong digital infrastructure base

- IT infrastructure and SME IT equipment
- Regulatory framework

- Digital identity
- Digital data

B. Promote a literate, informed public with privacy protection and cyber risk management

- Financial, business, and digital literacy
- Data protection and cybersecurity
- Responsible use of alternative data

C. Build open and competitive markets, in which partnerships are encouraged, to accelerate responsible innovation

- Digital payments systems
- Bank-FinTech partnerships
- E-commerce and the sharing economy

In the first core area, a strong digital infrastructure base is an enabler for the digitalization of SMEs. A sufficiently developed IT infrastructure, an enabling regulatory framework, an inclusive, reliable registration system for individuals and legal persons, and a trustworthy digital official identity system that satisfies the global AML/CFT standards and regulatory requirements and needs in the financial sector are essential prerequisites for the digitalization of SMEs. Additionally, a reliable data storage/record keeping system that ensures the availability and accuracy of SMEs' digital transaction data and other digital data used for digital lending is instrumental for the development of digital lending models that improve the result in higher access of SMEs to finance. No less important, reliable digital recordkeeping and data storage and prompt access is essential in order to comply with AML/CFT and other regulatory requirements and safeguard financial sector integrity.

In the second core area, policy options are directed to particular areas that contribute to the development of the awareness, knowledge, and competencies required to incentivize SMEs to use technologies and increase their digitalization. At the same time, it is also important to manage the risks associated with digitalization, including data protection risks, cybersecurity risks, or financial stability risks and—depending on the nature of the digital products/services, potential AML/CFT risks.

In the third core area, policy options seek to build open and competitive markets. A robust, safe, efficient, and widely accessible digital payments system is in many cases the point of entry for the digitalization of SMEs. Other specific policy options in this core area focus on how to enable SMEs to benefit from bank-FinTech partnerships, and a competitive

Policy Options for Promoting Digital and Innovative SME Financing	G20 High Level Policy Guidelines for Digital Financial Inclusion for Youth, Women and SMEs
Policy Option 1 Ensure that the necessary technology infrastructure/technology stack, digital hardware and digital products and services are accessible to SMEs through a national digital transformation strategy.	HLPG 4: Support the adoption of targeted policies and initiatives in national strategies.
Policy Option 2 Define a risk-based regulatory framework that encourages responsible innovation and aligns with the core mandate of maintaining financial stability, financial sector integrity, and market competition.	HLPG6: Consider developing a regulatory framework that supports responsible innovation in private and public sectors.
Policy Option 3 Encourage a trustworthy, robust, and secure digital identity system for individuals and SMEs.	HLPG2: Encourage the availability and affordability of tailored digital financial products, whilst addressing the need for AML/CFT safeguards and the necessary customer due diligence measures and digital identity systems.
Policy Option 4 Improve the availability and accuracy of SMEs information, expand credit information sharing, and enable responsible cross-border data exchanges.	HLPG3: Improve the availability and accuracy of disaggregated data with regards to access and the use of financial products and services.
Policy Option 5 Support strategies to promote the financial, business, and digital capability of SMEs.	HLPG7: Enhance financial, business, and digital literacy and capabilities through targeted interventions and by leveraging technology.
Policy Option 6 Minimize the risks associated with the digitalization of SMEs, particularly by ensuring data protection and privacy rights, and adequately managing cybersecurity risks.	HLPG8: Support financial consumer protection measures, including data protection, that address the needs of youth, women, and SMEs.
Policy Option 7 Ensure the responsible use of alternative data, consistent with applicable laws and good practices related to consumer protection and remain vigilant to potential financial stability risks.	HLPG8: Support financial consumer protection measures, including data protection, that address the needs of youth, women, and SMEs.
Policy Option 8 Support robust, safe, efficient, and widely accessible digital payment systems and create incentives for merchants and SMEs to accept and for consumers to use them.	HLPG1: Promote a competitive environment for banks and non-banks and support the development of a widely accessible, secure, and responsible digital infrastructure and interoperable payment systems.
Policy Option 9 Create the conditions that encourage bank-Fintech partnerships that may lower costs, strengthen financial inclusion, and/or improve the quality of financial products and services for SMEs.	HLPG1: Promote a competitive environment for banks and non-banks and support the development of a widely accessible, secure, and responsible digital infrastructure and interoperable payment systems.
Policy Option 10 Promote a level playing field to ensure that the benefits of e-commerce and the sharing economy result in an inclusive growth for SMEs.	HLPG6: Consider developing a regulatory framework that supports responsible innovation in private and public sectors.

environment that allows SMEs to participate on a fair basis in e-commerce and the sharing economy.

Recommended actions for each of these policy options are set forth below. Both the policy options and the suggested implementation actions are indicative and voluntary. Countries should take into consideration their particular circumstances and their starting points when deciding to implement any of these policy options or defining concrete measures to promote digital SME financing—including innovative business and underwriting models.

Develop a Strong Digital Infrastructure Base

Policy Option 1: IT Infrastructure and SME IT Equipment

Ensure that the necessary technology infrastructure/ technology stack, digital hardware, and digital products and services are accessible to SMEs through a national digital transformation strategy.

Background:

SMEs can substantially benefit from digital transformation in terms of greater access to market and customers, lower operational costs and higher productivity, better collaboration with other SMEs, improved communication with their customers, and an improved access to financing.

New technologies, such as Big Data, AI/ML and cloud computing services, and the introduction of new business models and digital products/services offer clear benefits and opportunities.

Reliable IT Infrastructure and IT hardware and software are primary requirements for SMEs digitalization. However, SMEs´ adoption of digital technologies needs to be tackled in a responsible and holistic manner. A national plan could ensure wide SME access to digital infrastructure and basic hardware and software at reasonable prices.

Potential actions:

- Encourage investment by governments and mobile network operators to increase the Internet coverage.
- Enhance competition in broadband Internet to increase speed and reduce cost.
- Ensure “last mile connectivity”, providing resiliency through complementary online and offline solutions.
- Enable the delivery and use of cloud computing-based services.
- Consider reducing import duties and taxes on IT equipment.
- Consider establishing tax incentives for SMEs to acquire or renew IT hardware and software.
- Facilitate the complementary SME investments related to adopting technology, especially investment to re-skilling or hire new workers.

Policy Option 2: Regulatory Framework

Define a risk-based regulatory framework that encourages responsible innovation and aligns with the core mandate of maintaining financial stability, financial sector integrity, and market competition.

Background:

The challenge for policymakers is to take an appropriate, risk-based regulatory approach that supports responsible innovation in the financial sector while serving their core mandate of preserving financial system integrity, protecting consumers and maintaining financial stability.

Given the speed of innovation and novelty of certain emerging technologies, regulators have in some cases adopted a wait-and-see approach, monitoring new technologies and/or innovative financial products/services to understand them better before regulatory intervention. In other cases, governments have favored a test-and-learn approach, creating custom frameworks to test new ideas in a live environment. Regulatory sandboxes and, to lesser extent, innovation accelerators, are some of the tools that regulators are using to create a closely supervised test environment. Additionally, the creation of Innovation Offices has also focused regulators on engaging with, and providing regulatory clarification to, financial services providers seeking to offer innovative products and services. Finally, governments have issued new regulations or modified existing regulations to cover innovative FinTech products/services and business models

Potential actions:

- Conduct a rigorous, comprehensive risk and regulatory gap analysis in determining the risks associated with new technologies, products, and services and the appropriate and timely regulatory responses, considering : (i) the risks (and benefits) presented by new

technologies, products and services—including money laundering/terrorist financing and fraud risks and potential benefits for financial inclusion; (ii) the application and effectiveness of the existing legal and regulatory framework, including the existence and the effectiveness of self-regulatory initiatives; (iii) the scope and stage of development of relevant types of FinTech business; (iv) the regulator´s own supervisory/examination capacity; (v) regulatory burden on DFS providers and/or consumers; (vi) level of financial inclusion.

- Implement effective methods to keep abreast of new and emerging technologies, products and services, including ways to engage with financial institutions, technology service providers, financial inclusion officials and organizations, and other relevant stakeholders regulators to examine the risks and benefits of innovation and review existing regulation, and regulation of innovative DFS, to include considering the creation of an innovation office as a way to facilitate regulator-innovator engagement and learning. Since this is easier to establish than other regulatory initiatives, this could be particularly compelling for resource-constrained regulators in emerging and developing economies.
- Deploy test environments, e.g., regulatory sandboxes, to determine whether innovative DFS can comply with existing regulatory requirements and if not, whether there are alternative means that would enable the innovative digital financial product or service to achieve the underlying regulatory objectives.
- Promote domestic, regional and international cooperation and coordination among authorities to create integrated financial markets and to preserve global financial stability and integrity.
- In the context of a risk-based approach to financial sector regulation, consider the potential administrative burden on SMEs, financial institutions and other DFS providers when amending current reforms or drafting new regulation of alternative lending models.

Policy Option 3: Digital Identity

Encourage a trustworthy, robust, and secure digital identity system for individuals and SMEs.

Background:

A unique official identity is necessary to allow SMEs to fully participate in the digital economy. and to protect the financial system from ML/TF and other illicit financing abuse. Trustworthy (accurate, reliable, and independent) digital official identity, whether for individuals or entities, enables identity service providers to facilitate SME registration and licensing; facilitates financial institutions' compliance with customer identification/verification and other AML/CFT requirements; and helps mitigate fraud. The FATF[170] has recently provided extensive guidance on the potential benefits and risks associated with digital identity systems, and how trustworthy digital identity solutions can be used under the global AML/CFT standards to conduct customer identification and verification of individuals in the financial sector.

While a variety of digital identity systems/solutions–government-provided and private-sector provided and using a wide range of technologies—can deliver trustworthy proof of official identity, developing countries are generally implementing national digital identity systems to meet their Sustainable Development Goals. Given the widespread lack of official identity registration and documentation for both individuals and SMEs in such countries, trustworthy identity proofing presents a persistent challenge. Several countries have adopted innovative approaches to addressing this obstacle with respect to individuals—e.g., India's Aadhaar system. As noted previously, trustworthy proof of SME owners/managers' official identities (including in particular official individual digital identity) could be leveraged to address lack of valid proof of identity for informal SMEs, at least as a stop-gap measure, until registration, licensing, and digital documentation of legal entities is readily and easily available for SMEs currently operating in the informal economy.

Potential actions:

- Establish digital business registries that (i) allow easy registration, based on collecting and recording appropriate information, such as the nature and purpose of the entity; its primary place of business (if applicable); the (verified) names/addresses/identity numbers of the entity's owners and managers, and the names of its beneficial owners; (ii) assign each registered business a unique identity number and business name, preventing multiple businesses from taking the same name or the same individuals from establishing multiple front companies (e.g., shell companies that are established for illegitimate purposes, such as money laundering, fraud, or sanctions evasion) and (iii) provide trustworthy identity credentials (preferably digital) tied to the entity's unique registered name and identity number. In countries where a trustworthy and efficient National Identification (ID) system for individuals exists, registries should obtain and record the official identity

documentation of the SME's owner(s) and management as part of the company registration process.

- Especially for smaller enterprises, leverage the SME owner(s)' transaction history to help both government authorities and financial institutions understand the nature of the entity's business and its credit risk.
- Develop a digital identity framework that both meets the "reliable, independent" trustworthiness requirements for customer identification/verification established by the FATF and is guided by the following principles developed by the World Bank:[171] ensure universal coverage and accessibility; remove barriers to access and usage; ensure that it is robust, secure, and that it collects and uses only information necessary for the system's explicit purpose. It should be sustainable, promote open standards and vendor neutrality, and be built on a legal and operational foundation of trust and accountability, protecting user data rights.

Policy Option 4: Digital Data

Improve the availability and accuracy of SMEs information, expand credit information sharing, and enable responsible cross-border data exchanges.

Background:

One of the reasons for the SME financing gap is the lack of enough financial data to perform traditional credit assessments of SMEs by financial institutions. However, SMEs are generating a massive digital footprint and data trails in payment platforms, social networks, mobile apps, and other platforms, that could serve as data points for credit decision-making for traditional and non-traditional lenders. Also, credit reporting providers are starting to adopt alternative data for credit worthiness evaluation. The use of these alternative data sources paves the way for improved access to financing by SMEs.

Since the aftermath of the 2008 global financial crisis, FinTechs, which utilize new business models delivered though digital channels and based on the use of innovative technologies, have emerged. These players are transforming the traditional lending process by automating different tasks, such as underwriting, loan servicing, aspects of regulatory compliance, and reducing the price and time to serve SMEs in their financing needs.

Considering the different sources of data (both structured and unstructured) used for credit analysis in the absence of traditional data sources, a first challenge emerges to the forefront of credit reporting: the need to ensure the accuracy of information.

Potential actions:

- Promote automation of SMEs data collection to help to increase the availability and quality of data and ensure that these data remain updated and readily accessible.
- Digitalize some services, like tax filing, company registration, and other services. This would encourage a wider digital data footprint for SMEs.
- Encourage access to information in a non-discriminatory manner to market participants.
- Expand credit reporting service providers (CRSPs) information sharing. In this spirit, consideration could be given to requiring financial service providers to report credit data and other relevant information to CRSPs, promoting information sharing between CRSPs or promoting open data platforms with other data repositories (such as court records, company registries, collateral registries or other).
- Ensure an adequate level of coordination among regulators. It is key that international standard setting bodies, like the BIS Task Force on Data Sharing, have a role to play in enhancing this collaboration and encouraging harmonization.

Promote a Literate, Informed Public with Privacy Protection and Cyber Risk Management

Policy Option 5: Financial, Business, and Digital Capability

Support strategies to promote the financial, business, and digital capability of SMEs.

Background:

The digitalization of SMEs remains low and unequally distributed, mainly due to limited knowledge, reluctance to change processes, and shortage of skilled talent. In certain cases, the digital, business, and financial literacy in women-owned SMEs represents a particular challenge.

Financial, business and digital capabilities are three distinct aspects that enable better management and enhance the digitalization of SMEs:

- Financial capability results in better informed choices about costs, income, lending, cash flows, and funding on the part of SMEs.

- Business capability is critical for taking adequate managerial decisions, in terms of human, financial and capital resources.
- Digital capability is key to understanding the benefits of digital products and the impact of digital transformation.

Potential actions:

- Develop or improve upon a national diagnosis of the impact of digital finance on SMEs as a first step to measure key indicators and to assess the initial supply and demand situation of digital financial services.
- Develop a national strategy for promoting digital financial literacy in SMEs. Among the core competencies that could be considered in this framework are:
    - Building trust in digital solutions and promoting the benefits of using digital financial services and technology innovations.
    - Protecting consumers and SMEs from vulnerabilities caused by new types of financial exclusion resulting from the misuse or bad use of digital tools.
    - Informing and supporting consumers and SMEs that are at risk of over-reliance on easy access to digital sources of credit.
    - Making consumers and SMEs aware of the importance of protecting themselves from the increased vulnerabilities of cybersecurity risks and digital crime.
- Disseminate the core digital competencies through communication campaigns and/or specific capacity building programs directed towards SMEs by delivering financial, business, and digital education through an appropriate mix of traditional and digital means targeted to SMEs and final consumers, while particularly taking into account the traditional delivery methods to address vulnerable and less digitalized groups of SMEs.
- Measure and evaluate digital financial services education programs to better understand their impact, encourage and standardize the use of proved toolkits and share the results at a national and international level.
- Involve private and nonprofit players in the design and implementation of digital financial literacy initiatives to ensure that digitalization contributes effectively to financial education and inclusion, and to ensure coordination between public authorities and private and nonprofit stakeholders.
- Encourage private sector-led initiatives aimed at empowering small businesses with the essential digital skills.
- Help SMEs to train the workforce with the right digital skills by:
    - Training young unemployed people for vacant digital jobs through internships and short-term training programs;
    - Raising awareness about the importance of digital skills for employability and competitiveness; and
    - Upskilling and retraining the workforce with particular attention to helping SMEs that are facing challenges in attracting and retaining talent with digital skills.
- Encourage international cooperation to provide capacity building and technical assistance to emerging countries.

Policy Option 6: Data Protection and Cybersecurity Risks

Minimize the risks associated with the digitalization of SMEs, particularly by ensuring data protection and privacy rights, and adequately managing cybersecurity risks.

Background:

The increasing digitalization of SMEs is deepening the digital footprint that they leave behind SMEs are often willing to share those data if they perceive a value in exchange, and the use of alternative models and advanced analytics provide increasing opportunities for SMEs in gaining access to finance

However, access to SMEs data also brings important challenges in terms of ensuring the responsible use of those data and preserving SMEs' privacy rights.

A major consequence of the increasing digitalized context is the rise of potential threats of cyber incidents. Not only big companies, but more and more often SMEs also fall victim to cyber threats. SMEs are especially vulnerable to cyber security threats due to the fact that their security is limited compared to bigger companies and their procedures are typically less careful. In many cases, SMEs are not even aware of the fact that they contain valuable information for cyber criminals. In addition, because of their limited resources, the damage for SMEs can be harder to overcome than for large businesses.

Potential actions:

- Create data privacy regulations that guarantee that there are appropriate rules for the use, security, and

control of SMEs data, and ensure that data are protected and disclosed and shared with other parties only when that would benefit market transparency and result in increasing chances of access to finance.

- Design data security strategies, with SMEs as a specific segment.
- Consider capacity building initiatives (publicly sponsored or co-sponsored with the private sector) that try to mitigate the main obstacles to SMEs in implementing measures to prevent or reduce cybersecurity risks. Those initiatives could be focused on upskilling the current workforce to avoid obsolescence of skills, reskilling the current workforce to change from another domain of expertise to cybersecurity, or more structural measures approaching the education of the future workforce.
- Consider participating in programs aimed at developing affordable cybersecurity solutions specially designed for SMEs. Cooperation with national and international agencies, and information sharing among them could be particularly instrumental in increasing the resilience of SMEs vis-à-vis cyber security threats.
- Develop cybersecurity awareness programs to be delivered to financial service providers, FinTechs, and digital solution providers.
- Ensure cooperation and share information on threats and incidents with national agencies that are active in the field of cybersecurity

Policy Option 7: Responsible Use of Alternative Data

Ensure the responsible use of alternative data, consistent with applicable laws and good practices related to consumer protection, and remain vigilant to potential financial stability risks.

Background:

The use of alternative data available in the context of increasing SMEs' digital footprints, combined with advanced data analytics and AI/ML, are reducing information asymmetry and providing additional sources of information to assess SMEs credit risk. In turn, this is leading to the creation of new lending products, that reduce the cost and widen the access to finance for SMEs not previously served or underserved by traditional lending providers.

FinTech and InsurTech companies have developed, with the use of AI/ML and a mix of traditional financial data and alternative data, highly sophisticated credit assessment models to evaluate a customer's ability and willingness to pay, and also to calculate insurance premiums. Some of these alternative models have proved to so far be highly accurate. However, concerns arise on the potential biases and the lack of explicability of the results of some of these models.

In addition, given the pace of technological change that has accelerated in the past few years and the fact that most innovative FinTech solutions using alternative data to provide financing for SMEs have only emerged during the upside of the economic cycle after 2008, consideration should be given to the fact that they have not yet been stress-tested during recessionary times. This could lead to potential financial stability risks that eventually could arise.

Potential actions:

- Consider establishing or adopting policy and regulatory principles that guide a responsible use of data and/or create a code of ethics for FinTech and InsurTech platforms to follow.
- Encourage international cooperation for a trustworthy AI.
- Remain vigilant to the potential risks to financial stability during downward economic cycles that could result in eventual increases in SME delinquency rates.

Build Open and Competitive Markets, in which Partnerships are Encouraged, to Accelerate Responsible Innovation

Policy Option 8: Digital Payment Systems

Support robust, safe, efficient, and widely accessible digital payment systems and create incentives for merchants and SMEs to accept and for consumers to use them.

Background:

Digital payments are in many cases the entry point for digital financial services. They have the potential to reduce delivery and transaction costs, increase formality, and generate massive amounts of data that could serve to create a digital footprint. The latter is instrumental for creditworthiness assessment of SMEs though innovative models used by banks, FinTechs, and other players.

In order to scale the use of digital payments on the part of merchants and/or other SMEs, the pricing model needs to be viable, with acceptance fees low enough to incentivize its use. This is particularly important for small businesses and informal retailers.

Potential actions:

- Encourage interoperability of different payment solutions that allow for the connection of all payment service providers (PSPs) within the country, irrespective of the different technologies used. Interoperability of payment solutions that allow for the connection of all PSPs does not mean that an automatic access to it is granted, but rather that the technical criteria for use do not exclude any participant.
- Promote the standardization of technologies for merchant payments that allow for a fast and cheap implementation and that have proved to create strong incentives for acceptance of digital payments.
- Use technology-neutral international standards that facilitate cross-border payment initiatives, that create large-scale markets and that could result in substantial efficiencies in regionalization initiatives.
- Adopt fast payments, that can transmit payment messages, provide clearing activities, and avail funds to the payee in real time or near-real time on a 24/7 basis.
- Ensure that payment systems are subject to risk-based AML/CFT and other relevant regulations.
- Enable agent networks and other cash management strategies to provide the flexibility SMEs need in the likely extended period when cash and digital co-exist.
- Create incentives for merchant acceptance. Among others, the following incentives could be considered:
    - Not allowing surcharges on transactions that could eventually be passed on to the merchant
    - Subsidizing the cost of acceptance in the early stages of development in a manner that does not discriminate between domestic and foreign payment service providers.
    - Establishing a cap/limit to merchant transaction fees.
    - Enhancing market transparency through the disclosure of exchange fees, rates and other commissions.
    - Adopting thresholds for cash payments for a single transaction above which cash payments are not allowed.
- Promote awareness of digital payment tools that are available and provide simple instructions on how they work and what are their benefits and risks.
- Introduce measures designed to ensure a transparent disclosure and the affordability of consumer fees, understandable to the financially underserved population including SMEs.

Policy Option 9: Bank-FinTech Partnerships

Create the conditions that encourage bank-FinTech partnerships that may lower costs, strengthen financial inclusion and/or improve the quality of financial products and services for SMEs.

Background:

Banks and FinTechs globally have moved towards a much more collaborative approach. That collaboration is allowing for new business models and innovative financial services based on the use of SMEs' transactional data and contributing to the development of an increasingly robust DFS ecosystem creation and the smart use of data. Driven by concerns over data security and privacy, and the reliability of the outcomes provided, some regulators, as well as financial institutions and technology service providers, are moving from a certain unregulated and unconstrained data collection and the use of certain practices, such as screen scrapping, to the mandatory or voluntary use of APIs that allow third parties, upon informed consent, to connect to banks and access customer data via standardized protocols. This standardization is led in some cases by the industry, while in other cases, open banking regulation requires banks to standardize and publish their APIs.

Most existing regulations about open banking only came into effect in 2018 or later, so it is too early to draw substantial lessons. The existing models differ in approach and scope, including with respect to, for example, the requirements for and /or degree of API standardization; the extent of data sharing that is permitted or required; the respective regulatory obligations of partnering FinTechs and banks; and the authority/ies responsible for supervision and examination. Early regulatory efforts have concentrated on establishing technical API standards; creating governance bodies and rules; enhancing data security; developing open banking infrastructure (technology stacks); and establishing authentication methods for granting third-party access.

One of the main challenges of regulated, open API frameworks is how to encourage the creation of business models that are based on access to customer's data, and that at the same time maintain a level playing field that does not create an asymmetry between banks, which are required to share their data, and FinTech companies which are granted the privilege of accessing that data.

Potential actions:

- Encourage API standardization to give FinTechs the opportunity to create new products and services or delivery methods for SMEs and support a more competitive financial services environment.
- Promote enhanced dialogue among regulators, banks and FinTechs that facilitates participation by banks and FinTechs in the design of open banking frameworks, with the aim of encouraging the general acceptance and relevance of open banking APISs.
- Consider encouraging the development of international API technical standards that would enable easier cross-border connectivity.
- Support global or regional platforms that promote cross-border interconnection and responsible data sharing, such as AFIN/APIX[172] operating in the ASEAN countries.
- Consider opening access to customer data access in additional sectors, moving from open banking in the financial sector towards open, data-driven economies.

Policy Option 10: E-commerce and the Sharing Economy

Promote a level playing field to ensure that the benefits of e-commerce and the sharing economy result in an inclusive growth for SMEs.

Background:

SMEs globally are benefiting from the collaborative economy in several ways. First, as clients, by having access to a wider range of products and services at lower prices. Second, by joining large digital platforms and partnering with them, SMEs have access to a much greater range of customers, while at the same they are able to substantially reduce operating costs and obtain important synergies. Third, digital platforms can provide data and analytics that could be highly instrumental for a better understanding of SMEs' development, customers' insights, and market trends that could result in more informed business decisions. Lastly, emerging technologies are making it affordable for an SME to actually start a digital platform, thus lowering the barrier to entry.

Thanks to advances in cloud computing, Big Data analytics and AI, and new business models, such as digital platforms and marketplaces, e-commerce has evolved to become an essential part of retail and business sales both in developed and developing economies, becoming a key enabler for SMEs growth and their access to the digital economy.

E-commerce flows of goods and services are increasingly international, with cross-border trade bringing additional challenges to domestic ones.

Among the main barriers observed limiting SMEs being able to stablish their presence online and benefit from e-commerce, the most common ones have to do with their lack of technical skills, business knowledge, and language capabilities. However, digital platforms lower the barriers to digitalization for SMEs by providing relatively mature and user-friendly ecosystems at reasonable costs due to economies of scale. Indeed, SMEs are usually an indispensable part of the business for digital platforms. This results in digital platforms having a strong motivation to promote SME digitalization.

Potential actions:

- Coordinate with the relevant authorities to ensure that the potential benefits of the sharing economy are not curtailed for SMEs. A healthy competitive environment with several platforms would result in the possibility of SMEs choosing among them, and hence in better access conditions.
- Encourage collaboration between government and digital platforms when designing and implementing programs oriented towards facilitating SMEs digitalization and access to the opportunities around e-commerce.

APPENDIX A
P2P/MARKETPLACE LENDING BUSINESS MODEL—OVERVIEW

P2P/Marketplace lending refers to platforms that serve as a matching service connecting borrowers (consumers, SMEs) who need capital with investors who have capital available to invest. Within P2P/Marketplace lending, there are two main operational models[173]:

1. **Traditional:** In this model, a borrower is matched with investors through the P2P/Marketplace lending platform. The platform is mainly a matching mechanism, which evaluates the credit risk of each borrower to determine the appropriate interest rate to charge. Loans are only originated if the borrower's funding target is met within a predefined time frame. The investors will earn interest on their investment and have the capability to invest in many different loans to build a portfolio. Some platforms provide exposure to multiple loans automatically, or "auto-select" loans, based on the risk category and loan term selected by the investor. The platform does not assume any risks related to the loan and earns revenue by charging fees to both the borrower and investor for the matching and origination process, as well as servicing the loans.

2. **Notary:** In this model, the platform also offers a matching service, but the main difference is that the loan is originated by a bank, which partners with the P2P/Marketplace lending platform. This model is widely used in Germany, the United States, and South Korea. The P2P/Marketplace lending platform acts an agent that brings together investors and borrowers, with banks originating all loans and then selling or assigning them to investors (either directly to the investors in smaller packages or to a platform subsidiary that repackages them into multiple loans).

Another important feature of P2P/Marketplace lending platforms is the type of borrower and lender involved in the platform. According to the World Economic Forum (WEF), the following categories of arrangements exist[174]:

TABLE A.1

P2P/Marketplace Platform Lending Arrangements

Category	Type of Loan	Type of Investor
P2P/Marketplace lending—Consumer	Consumer	Retail or individual
P2P/Marketplace lending—Consumer	Consumer	Institutional or "accredited"
P2P/Marketplace lending—Business	Business (SME)	Retail or individual
P2P/Marketplace lending—Business	Business (SME)	Institutional or "accredited"

P2P/Marketplace lending platforms provide benefits to borrowers since they can offer loans at lower interest rates than banks, as well as issue loans in a faster and more convenient manner than banks. A fundamental benefit of P2P/Marketplace lending is providing accessibility to finance for borrowers that did not previously have access to loans. It is important to note that originally, P2P/Marketplace lending started by connecting retail investors with individual borrowers, hence the name P2P. Over the years, as P2P/Marketplace platforms have expanded and scaled their operations, the model has evolved where the retail investor are not actively participating and have been replaced by banks and other financial institutions as the main investors. However, early stage P2P/Marketplace platforms in some emerging countries such as Indonesia still rely on retail customers as the main investors.

Debt-based crowdfunding platforms are also considered part of the P2P/Marketplace lending category in the report. Debt-based crowdfunding platforms have a similar business model as P2P/Marketplace lending; however, the main difference is that loans through debt-based crowdfunding are usually granted for specific projects of a company/SME (e.g. installing solar energy systems at a production facility to lower energy costs).

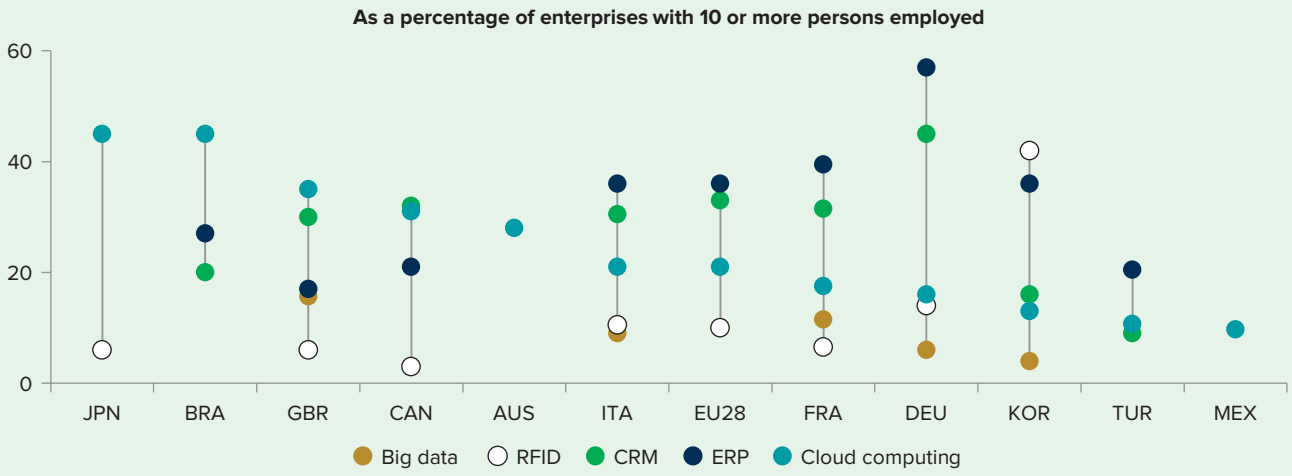
APPENDIX B
ADOPTION OF DIGITAL TOOLS AND SOFTWARE SOLUTIONS BY SMEs

Figure B.1 shows the adoption of digital tools and software solutions by businesses in G20 countries. The G20 countries for which data is available exhibit considerable variation in the adoption of digital solutions by businesses.[175]

When looking at cloud computing adoption by businesses in the G20 countries, the intensity of usage varies between small and large firms, with SMEs having a lower adoption rate (21 percent of small firms) compared to 30 percent of medium firms and 43 percent of large ones (Figure B.2).[176]

FIGURE B.1

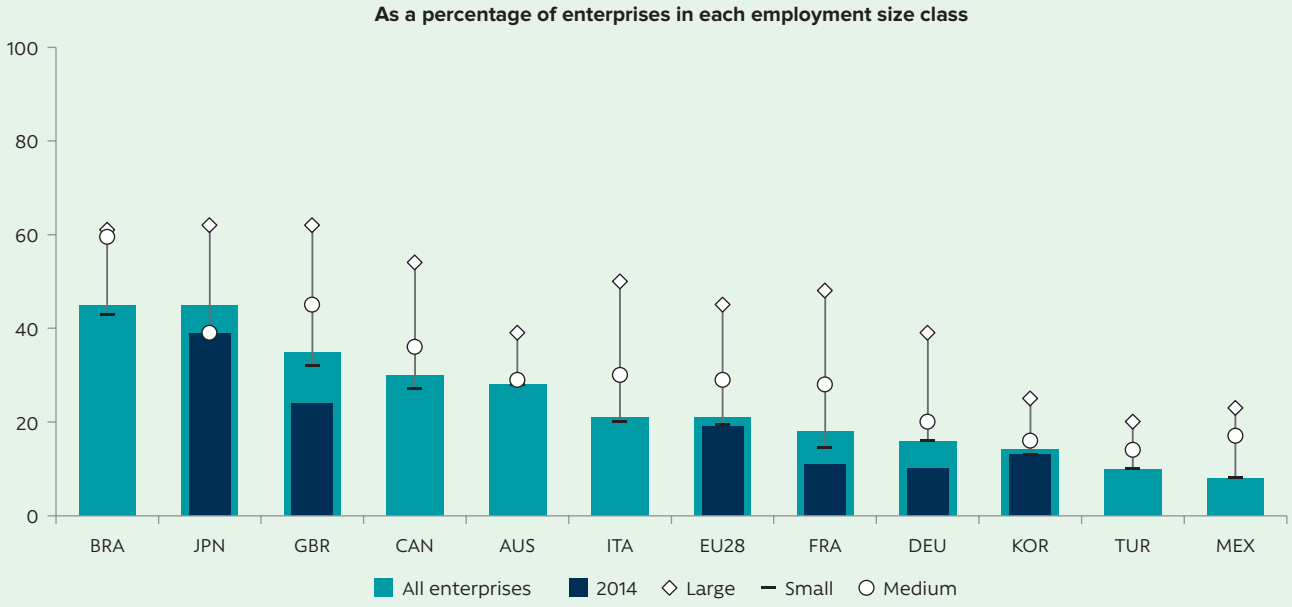
Adoption of Digital Tools and Software Solutions among Businesses by Technology, G20, 2016



Source: Adapted from G20 Digital Economy Task Force, 2018. *Toolkit for Measuring the Digital Economy.*

FIGURE B.2

Enterprises Using Cloud Computing Services by Size, G20, 2016



Source: Adapted from G20 Digital Economy Task Force, 2018. *Toolkit for Measuring the Digital Economy.*

APPENDIX C
LIST OF ADDITIONAL CASE STUDIES SUBMITTED BY G20 AND MENA COUNTRIES

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
Armenia, Madagascar, Fiji, Bhutan, Tajikistan, Zimbabwe, Mongolia, Morocco, Sri Lanka, Malaysia, Namibia, Russia, Timor Leste, Solomon Islands, Samoa, Ghana, Zambia, Costa Rica, Bangladesh, El Salvador, Kenya, The Philippines, eSwatini	AFI				N/A (examples are not related to DFS interventions)
Brazil	Brazil	Normative Ruling CVM no. 588	Public	Equity crowdfunding	The regulation on investment-based crowdfunding, was issued by the Securities and Exchange Commission of Brazil (CVM) in July 2017. The regulation covers the public offering of securities issued by small business (gross annual revenue limited to BRL 10 million) through participative investment electronic platforms. They are able to publicly fund their activities without the need of a previous registration at CVM. The annual funding limit per issuer is BRL 5 million per calendar year, with underwriting periods of no longer than 180 days. The annual funding limit per investor is BRL 10 000, and this limit may be increased by up to 10 percent in case of qualified investors. The platform must be registered and accomplish a set of requirements, as it has an intermediation role in the public offering. They shall disclose to the investor that the offering and the issuer are not subject to prior registration with CVM and that the Commission does not assure the truthfulness of the provided information. The objective of the regulation is to promote investment-based crowdfunding aiming at making it more accessible through accredited private electronic platforms.
Brazil	Brazil	Resolution CMN no. 4656/2018	Public	P2P lending/Equity crowdfunding	In April 2018, the Brazilian National Monetary Council (CMN) issued a resolution aimed at promoting equity capital and peer-to-peer financing, with the goal of making them more accessible through accredited private electronic platforms. The resolution provides for the creation of two new types of financial institutions to fund clients through electronic platforms: • The direct credit company is allowed to fund their loans exclusively through equity capital. • The peer-to-peer loan company is allowed to connect lenders and borrowers and to intermediate the negotiation of funding through electronic platforms. The licensing process is simplified compared to a traditional financial institution and there is no need to act in collaboration with traditional banks.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
EU	EU	Guide on Crowdfunding for SMEs	Public	Digital Literacy	The Guide on Crowdfunding for SMEs explains what crowdfunding is, offers information on different types of crowdfunding and gives practical tips on how to access it. The guide serves as a gateway to signpost SMEs to more specific and detailed information, if needed. The main channels for distribution of the Guide are the European Commission webpages, the Enterprise Europe Network and physical distribution at dedicated events, such as the European Crowdfunding Network Convention that is organized every year and is attended, on average, by 100 participants.
EU	EU	COSME Loan Guarantee Facility Digitalization (pilot)	Public	Other	To help SMEs in their digital transformation, the European Commission put in place a new digitalization pilot, which has been launched in the framework of the Loan Guarantee Facility of the COSME Program (COSME LGF). It is an EU program dedicated to supporting SMEs with EUR 2.3 billion budget. Around 60 percent of the COSME program is dedicated to the access to finance through debt and equity. The COSME LGF has so far provided financing to more than half a million SMEs in 31 countries, for a total of EUR 29 billion. This pilot is the first attempt of a targeted support to a defined policy area, in this case - digital transformation of SMEs. COSME LGF facilitates SME lending by providing guarantees and counter-guarantees to various financial intermediaries in Europe. It supports all types of SMEs in the digital transformation of their businesses, in all industry sectors and for different financing purposes (for example, investment in equipment or infrastructures, training and hiring of new especially skilled staff, consulting services, software licensing). The focus is on companies that are considered riskier lenders and that would have difficulties receiving financing otherwise (for example, "start-ups" or companies that cannot provide collateral). By sharing the risk, COSME guarantees enable financial intermediaries to expand the number of SMEs they can finance and facilitates SMEs access to (debt) financing.
Germany	Germany	Creditshelf	Private	Peer-to-Peer (P2P) Lending	This program provides credit mediation for SMEs through an online platform, utilizing such key technologies as mobile phone/Internet connectivity, cloud computing, and algorithms for Big Data analytics.
Jordan	Germany	GIZ in Jordan	Public	National Financial Inclusion Strategy	GIZ in Jordan, on behalf of the BMZ and the EU, has supported through two projects the Central Bank of Jordan (CBJ) and Ministry of Planning and International Cooperation (MoPIC), the Development and Employment Fund and other stakeholders in national efforts to achieve digital financial inclusion of various target groups including SMEs, and includes. • Strategic assistance for the national financial inclusion policy process (including digital financial services/FinTech alongside microfinance, SME finance, consumer protection and financial education); • Technical assistance and capacity development for research, regulatory reforms, and supervisory processes in microfinance and DFS; and • Financial education for mobile financial services The Jordanian authorities have demonstrated a high-level commitment to digital financial inclusion under the National Financial Inclusion Strategy for Jordan 2018–2020. To this end, the legal-regulatory framework and technological-financial infrastructure have been reformed and promotional campaigns for DFS rolled out.
Myanmar	Germany	YOMA bank—Easy SME	Private	Digital Transformation of SMEs	Using Easy SME apps, pilot testing has been run in 2019. 200 customers joined, some just key-in only. Now, the financial institution (YOMA bank) is trying to bundle accounting software, Internet banking and loan application in the next launch.
Myanmar	Germany	The Incubation Center (Center of Excellence)	Public	Other Innovative Financial Regulatory Initiatives	The Incubation Center (Center of Excellence) has been established under the SME Development Agency, Department of SME Development, with the objective to join the ASEAN Business Incubator Network. Various trainings such as capacity building, business management, HR, Information sharing workshops, trainings, talks are conducted at there. So far 80 businesses have been reached up to end of 2019.
India	India		Private	Digital Payments	There are many companies that provide digital payment solutions to a variety of customers, including SMEs in a sector-agnostic manner.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
India	India	Etyacol Technologies Private Limited, Micrograam Marketplace Private Limited, Rang De P2P Financial Services Private Limited, Monexo Fintech Private Limited, Dipamkara Web Ventures Private Limited, Fincsquare Fintech Private Limited, Luharia Technologies Pvt Ltd, SRS Fintechlabs Private Limited, RNVP Technology Private Limited, Bigwin Infotech Private Limited, Bridge Fintech Solutions Private Limited, Fair Vinimay Services Pvt Limited, Fintelligence Data Science Private Limited, Innofin Solutions Private Limited, NDX P2P Private Limited, Ohmy Technologies Private Limited, Visionary Financepeer Private Limited, Antworks P2P Financing Private Limited, Fairassets Technologies India Private Limited, Transactree Technologies Private Limited and 5paisa P2P Limited	Private	Digital Lending—Peer-to-Peer (P2P) Lending	The product provides a platform for direct lending/borrowing among peers, including SMEs.
India	India	Indifi Technologies Private Ltd.	Private	Digital Lending	Indifi is in the lending business to help SMEs expand their current business and help them bridge their working capital requirements. The company offers two primary products in the shape of Term Loan and Line of Credit depending on the need and requirements of the SME typically ranging from 12 to 18 months tenure. The company targets SMEs that are mostly underserved and don't get their working capital requirement support from Nationalized and private Banks. Indifi provides them an opportunity to expand their business operations.
India	India	LendingKart Technologies Private Limited	Private	Digital Lending	LendingKart provides unsecured loans to SMEs using a proprietary underwriting model as well as collateral free loans with limited documentation. Its underwriting approach has limited dependence on financial documents. It offers automated decision making with minimal human intervention and elimination of human bias. LendingKart is able to provide faster decisioning with quick a disbursement process and with flexibility in repayment tenure. More than 70 percent of customers are first time business loan borrowers with very limited credit history, and the average ticket size of less than INR five hundred thousand—thus serving a segment that is unserved/underserved by traditional financial institutions.
India	India	Master Directions—Non-Banking Financial Company—Peer to Peer Lending Platform (Reserve Bank) Directions, 2017	Public	P2P Lending	These Directions provide a framework for the registration and operation of NBFC-P2Ps in India. https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=11137
India	India	Guidelines for regulation of digital payments, open banking, digital identity framework and E-KYC	Public	Digital Payments/Open Banking/and Other	Though guidelines for regulation of digital payments, open banking, digital identity framework and E-KYC are in place, they are sector-agnostic and not specific to SMEs.
India	India	Enabling Framework for Regulatory Sandbox	Public	Regulatory Sandboxes	Provides a framework for live testing of new products or services in a controlled/test regulatory environment where regulators may (or may not) permit certain regulatory relaxations for the limited purpose of the testing. https://www.rbi.org.in/Scripts/PublicationReportDetails.aspx?UrlPage=&ID=938
India	India	Direct Benefit Transfers	Public	Digital Payments	A segment of government-to-people payments has been digitized by way of Direct Benefit Transfers The National Automated Clearing House (NACH) solution developed by NPCI facilitates interbank, high volume, electronic transactions that are repetitive and periodic in nature. The NACH - Aadhaar Payments Bridge (APB) System, has been helping the Government and Government Agencies make the Direct Benefit Transfer scheme a success. NACH-APB System has facilitated channelizing the Government subsidies and benefits to the intended beneficiaries using the Aadhaar as the identifier.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
India	India	Financial Literacy Centres	Public	Other debt products	RBI has advised FLCs of banks to undertake target specific awareness camps for entrepreneurs in co-ordination with ground level functionaries. An indicative list of content to be covered in these camps has been prepared by RBI and is placed in the education website of RBI. (https://www.rbi.org.in/FinancialEducation/Home.aspx). A mechanism has also been put in place to monitor the conduct of these camps and gather feedback from the participants.
India	India	PSBLoansIn59Minutes	Public	Online marketplace	PSBLoansIn59Minutes is an online marketplace, which enables in-principle approval for MSME loans up to 5 crore in 59 minutes from Public Sector Banks. On this platform, MSME borrower is not required to submit any physical document for in-principle approval. The solution uses algorithms to analyze data points from various sources such as IT returns, GST data, Bank Statements, etc. Thus, the platform paves way for digitization of MSMEs.
India	India	Financial Literacy Week 2020	Public	Financial Literacy	Financial Literacy Week 2020 was observed from February 10-14, 2020 on the theme of "Micro, Small and Medium Enterprises (MSMEs)", wherein all banks were advised to disseminate information and create awareness among its customers and general public about aspects relating to formalization, collateral free loan, discounting of receivables, rehabilitation of stressed units and timely repayment. A centralized mass media campaign was also undertaken to broadcast essential financial awareness messages to MSME Entrepreneurs. The promotional material has been uploaded in the 'Downloads' tab under the heading "Financial Literacy Week 2020" in the financial education website of RBI. (https://www.rbi.org.in/FinancialEducation/Home.aspx)
Italy	Italy	Workinvoice	Private	Digital Lending—Supply Chain Finance (SCF)	Workinvoice is a web-based marketplace dedicated to the trading of commercial receivables. It helps SMEs free up cash flow quickly (within 48 hours) by unlocking funds from unpaid invoices. SMEs log on the platform and sell their unpaid invoices to different investors through an auction-based process. Major benefits include speed of procedures (which are entirely digitalized), improved access to short-term funding.
Italy	Italy	FinTech Channel	Public	Other Innovative Financial Regulatory Initiatives	The Bank of Italy has set up a dedicated channel through which operators can submit financial service projects with innovative content. FinTech Channel is a newly established point of contact and dialogue with market operators that propose innovative solutions in the financial services industry. The initiative targets both new players and traditional intermediaries involved in the development of innovative technological and organizational solutions within the financial system. Projects for commercial motives are excluded from the scope of the initiative. In 2018 there were 15,500 contacts with the FinTech Channel, and 30 projects submitted.
Italy	Italy	Law No. 58/2019	Public	Regulatory Sandboxes	The law provides urgent measures for economic growth (Growth Decree), empowering the Italian Ministry of Economy and Finance - to adopt one or more regulations enabling a regulatory sandbox under national law. The draft regulation aimed at introducing in Italy the Regulatory Sandbox is currently being finalized. The Regulatory Sandbox shall have a maximum testing period of eighteen months, and a potential number of exemptions from current legislation requirements (that is simplified and proportionate access requirements) within the bounds of the existing European Union's legislation in force in the field and the principle of proportionality.
Italy	Italy	Italian Startup Act	Public	Other Government/ Regulator-led Programs	In late 2012, Italy introduced a comprehensive legislative framework (Decree-Law no. 179 of 18 October 2012) aimed at fostering the creation and growth of its startup ecosystem. The so-called "Italian Startup Act" (ISA) introduced a brand-new legal definition of innovative startups and laid out an extensive package of incentives to support these types of firms. For example, innovative startups benefit from a simplified, free and direct intervention from the Guarantee Fund for Small and Medium Enterprises, a public facility that fosters access to credit by applying guarantees on bank loans.
Italy	Italy	Smart & Start Italia	Public	Other Government / Regulator-led Programs	Launched in 2014, as part of the Italian Startup Act, Smart&Start Italia is the main financing program dedicated to innovative startups at the national level, with a total budget of about €260 million. Managed by Invitalia, the national business development agency, the program offers subsidized loans to innovative startups (already active or soon to be established) to cover investment plans and managing costs worth at least €100 000 and up to €1.5 million. Spending programs are covered by an interest-free loan up to 70 percent of their amount. The loan coverage rate rises to 80 percent if company members are mostly women or are under 35, or include a researcher returning from abroad.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
Italy	Italy	Transition 4.0 (previously referred as Industry 4.0)	Public	Digital Transformation of SMEs	Launched in 2016, the National Plan on Industry 4.0 aims to spur competitiveness, foster innovation and green investments, reinforce skill abilities of workers, and enhance the production of Made in Italy. The Plan is technology-neutral and has the purpose of encouraging and sustaining the digitalization process of firms through fiscal incentives. The measures introduced by the Budget Law 2020 particularly favor MSMEs and give special attention to innovation in value chains with relation to new technologies with a focus on the green transition and digitalization. The measures include: • tax credit for new capital goods, tangible and intangible assets (software and IT systems) for the technological and digital transformation of the production processes • tax credit for R&D investment • tax credit for technological innovation activities • tax credit for design and aesthetic realization activities in specific sectors (textile, fashion, shoes, glasses, jewelry, furniture and ceramics) • tax credit on training
Italy	Italy	Voucher for "innovation managers"	Public	Digital Transformation of SMEs	Introduced by 2019 Budget Law, vouchers for innovation managers consist of a non-repayable grant that SMEs can use to purchase specialist consultancy services aimed at supporting their digital transformation, for example through acquisition of "4.0" technologies. The contribution is equal to 50 percent of the costs borne by the firm, up to a ceiling of €40 000 for micro and small enterprises, and 30 percent (with a €25 000 limit) for medium-sized enterprises.
Italy	Italy	Voucher for the digitization of SMEs	Public	Digital Transformation of SMEs	It is a measure for micro, small and medium-sized enterprises which provides for a contribution, through the granting of a "voucher", for an amount not exceeding € 10.000, aimed at the adoption of digitization of business processes and technological modernization. The goal of the intervention is to help improve business efficiency; modernize the organization of work, through the use of technological tools and forms of work flexibility, including teleworking; develop e-commerce solutions; encourage the use of broadband and ultra-broadband connectivity or Internet connection via satellite technology; carry out qualified staff training in the ICT field.
Italy	Italy	SPIN - Scaleup Program Invitalia Network	Public	Other Innovative Financial Regulatory Initiatives	SPIN is the Invitalia program dedicated to the entrepreneurial development of innovative SMEs, innovative start-ups and university spinoffs, and has operational headquarters in Basilicata, Calabria, Campania, Puglia, and Sicily. The SPIN program follows a progressive path organized in two phases. In the first phase, the companies participate in an innovative digital entrepreneurial development program. In the second phase, the best companies have access to an advanced training course. In particular, the path includes business development in the classroom, one-to-one meetings and a final "check-up" session with the support of a mentor, pitch review, support in public speaking and a round table with investors to encourage business matching.
Italy	Italy	National Innovation Fund	Public	Other	The National Innovation Fund (Fondo Nazionale Innovazione, FNI) is a public venture capital fund, launched to support innovative companies and the national VC market. Administered by Cassa Depositi e Prestiti (CDP), the fund may either invest directly in firms, by acquiring minority shares, or intervene indirectly, by investing in other VC funds and "funds of funds".
Italy	Italy	Calabria, Liguria, Lombardia, Molise, Puglia, Valle D'Aosta	Public	Digital Payments	Calabria: electronic payment system (Decree n. 10220 of 20/09/2018) Liguria: electronic invoice and electronic payment systems (Decree n. 24 of 28/12/2018) Lombardia: on-line payment system Molise: online tax payment system (Decree n. 437 of 10/09/2018) Puglia: e-platform for payment monitoring (Decree n. 532 of 05/04/2018) Valle D'Aosta: local tax e-payment system (decree n. 7536/2018)

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
Jordan	Bank ABC (Arab Banking Corporation - Jordan)	Echo Technology Company	Private	Digitization of Government Processes	The company is one of the leaders in the creation of Websites/Mobile Apps for ministries and governmental entities. One of the company's projects is in conjunction with CRIF, a company that provides credit risk information to financial institutions. Echo Technology Company was hired to design and develop the client relationship management system. This is a key enabler in terms of improving the financier's credit process, and in turn, it helps SMEs/ corporates/individuals in obtaining financing at a faster pace (given all other factors being appropriate).
Jordan	Jordan Kuwait Bank	MENAITECH	Private	Digital Transformation of SMEs	Jordan Kuwait Bank signed a contract with MENAITECH to supply its SME customers a package of IT solution that support their businesses. Digital solutions offered by MENAITECH include a Customer Relationship Management solution, a document management system, automation of internal and external operations, and a multi-lingual cloud computing technology salary system that includes local laws and regulations. Jordan Kuwait Bank provides additional services to its SME clients, such as cash management, funds transfer/receipt between customer accounts inside and outside the country, and customized reports according to SMEs needs.
Jordan	Jordan Micro Finance Company (Tamweelcom)	Middle East Payment Services (MEPS)	Private	Other: Merchant Point of Sale Finance	
Jordan	Housing Bank	CSI INFOSYS E-Fwatercom (A2A) Progress soft MII	Private	Digital payments/Digital Lending	Digital payments: including transfers, bills payments, western union, cards Iskan online and mobile banking: balance inquiry, transactions inquiry, transfers, bills payments, check services, statement request Client trade: applying LCs and LGs application online without any need to visit bank branches Peer to Peer: connecting borrowers and investors by providing borrower's applications to investors through Internet. E COMMERCE: buying and selling of goods or services using the Internet, and the transfer of money and data to execute these transactions Digitization of government programs: provide user-friendly government services to SME'S
Jordan	Invest Bank	Integreal Software & Consultancy	Private	Other	Through the IBANK service of Invest Bank, bank's customers, including SME customers, can get bill payments, e-fawateercom, payrolls, local/foreign transfers, transfer between accounts, LG/LC requests, dividend distribution and payment collection.
Jordan	Jordan Islamic Bank	Hayyan Horizons for Information Technology	Private	Other	Hayyan Horizons is an IT security systems integrator providing solutions and services that help customers address their needs and protect them against malicious attacks. Some of the solution offered include security information and management, vulnerability management and scanning, email and web security, data loss prevention, and more. Estimated benefits to MSMEs include: • Serialization and blockchain solutions. • Security visibility across all platforms and solutions in the customer environment. • Risk assessment and operational risk management. • Full cybersecurity solutions with leading technologies
Jordan	Jordan Ahli Bank	Jordan Ahli bank	Private	Digital Payments/Digital Lending	SME Clients are benefiting from the digital solutions provided from Jordan Ahli bank that include: Internet Banking and Mobile Banking, ATM, cards payments, digital payments, digital salaries transfer of the client employees, requests through the official website. Jordan Ahli bank offers a wide range of products that fit the clients' needs. The bank has also developed new products such as merchant financing. Jordan Ahli bank is in the process of applying loan origination system that is dedicated to SMEs in the end of year 2020. Whereby the bank's solutions will be fully automated and digital.
Jordan	Egyptian Arab Land Bank	Access to Arabia (A2A)	Private	Digital Payments	Integration between online banking and mobile banking with the Efawateercom service to facilitate digital payments, according to the predefined bills on their profile. Estimated benefits to MSMEs include fast and easy access to financial services and immediate access to client's accounts at all times 24/7.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
Jordan	Jordan Commercial Bank	ICS	Private	Digital Transformation of SMEs	The provided solution avails the ability of SMEs to transfer salaries through Internet banking.
Jordan	MIFM	Delta Informatics Company	Private	Digital Transformation of SMEs	The DFS solution enables the process of getting retailers trading online to be much faster. It provides help in managing cash flow, financial management and ultimately, positively contributed to the survival of a business. It also helps reduce the amount of time it takes to begin being able to accept payments.
Jordan	Bank Al Etihad	Premium Technologies	Private	Digital Lending - Supply Chain Finance (SCF)	The company is financing the needs of small and medium enterprises that sell their goods and services to large corporate clients. The online platform connects buyers and suppliers where suppliers can discount their invoices instantly without having to wait until the due date. Suppliers sign up to discount their invoices before the due date for the immediate need of cash without having to wait till due date (financing a 100 percent of invoice through supply chain platform). In 2019, 4 million JOD were discounted.
Jordan	Arab Jordan Investment Bank	ICS Financial Systems—ICSFS	Private	Digital payments	The DFS solution of enables cards settlement, money transfers (between internal and external bank accounts both domestically and internationally), e-Fawateerkom bill payment, cards settlements, e-statements, check book requests and shopping credit, ATM cards. The solution helps lower operating costs as clients do not need to visit the branch or contact the customer service to complete the requests, reduces paperwork and improves efficiency, allows for 24/7 client servicing, and offers fast and easy access to the financial services.
Jordan	Capital Bank of Jordan	Capital Bank of Jordan	Private	Other: Omni Channel	OMNI Channel Online banking system to cover digital payments including own account transfer, transfer within capital bank, domestic transfer, international transfers (STP and non STP), bill payments, batch payments (including salary, domestic and international) , account statements, accounts overview (current, saving, overdrafts, loans, deposits, postdated checks), offline requests (checkbook request, loan request, cards request)
Jordan	Bank Audi—Jordan	Al-Rowad Information for Technologies Co.	Private	Digital Transformation of SMEs	The range of the company's services encompasses such areas as business process management /re-engineering through workflow packages; data transformation, loading, modeling and warehouse solutions; implementation of business intelligence solutions including reporting, query and analysis, performance management (dashboards and balanced scorecards) and analytic applications; implementation of packaged and customized client/server applications.; and implementation of customer relationship management solutions (CRM), such as sales and marketing automation, help desk and technical support, automatic applications migration and project management.
Jordan	Ahli Microfinance Company		Private	Other	Ambition loan, targeting startups and licensed businesses. Intaji loan, it is a new loan expected to be launched in Q1 2020, targeting licensed businesses more than 1 years old covering productive needs. We provide non-financial services mainly training to raise awareness about financial literacy. We conducted 8 sessions attended by 75 clients. In addition, we help our clients in marketing their services and products by conducting/ sponsoring bazaars, in 2019 we conducted/sponsored 3 bazaars and around 200 clients benefited from them.
Lebanon	Lebanon	P2P and P2 small business SME Digital instant mobile payment solutions in multicurrency	PPP	Digital Payments	Peer to Peer and Peer to small business or SMEs instant payment with very low fees that cannot exceed 0.5 percent per transaction is now allowed. Electronic payment solution on both desktop and mobile that might use QR codes. Program will be completed with partnership of private/public sectors. The latter will set up the required platforms and networks and connect to the BDL RTGS system in settlement.
Mexico	Mexico	AlphaCredit Capital	Private	Digital Lending	AlphaCredit has two main lines of business, with technology being one of the most important pillars for its development: Consumer loans in Mexico and Colombia, with the following products: 1) loans for government employees in Mexico and Colombia, 2) loans for pensioners and retirees in Mexico, and 3) 100 percent digital loans for independent professionals and private employees. Financing solutions for SMEs: 1) factoring, 2) leasing, and 3) digital working capital loans.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
Spain	Spain	Smart Escrow	Public-private partnership	Digital lending - Supply chain finance	The model has a special section for public institutions. Smart Escrow has agreements with SGR and public credit institutions (CESCE) to be able to finance SMEs in a region with the endorsement of these institutions in order to grant greater guarantees to the investors (financers) of the projects.
Sudan	Sudan	N/A	N/A	N/A	N/A
Turkey	Turkey	Fon Radar	Private	Digital Lending - Supply Chain Finance (SCF)	FonRadar offers SMEs the opportunity to reach the most appropriate alternative in a matter of minutes against their timely receivables. SME uploads the post-dated check it wants to convert into cash. SME selects from the factoring firms and banks registered in the FonRadar to receive offers. The Financial Institution sends the requested offer to the SME. The SME approves the most suitable of the offers coming in a short time. The SME receives its money from the nearest branch with the FonRadar reference number.
Turkey	Turkey	Law on Payments and Securities Settlement Systems, Payment Services and Electronic Money Institutions" (Law No.6493)	Public	Digital Payments/Open Banking	"Law on Payments and Securities Settlement Systems, Payment Services and Electronic Money Institutions" (Law No.6493), which was enacted in 2013, defined for the first time the terms "payment system", "securities settlement system", "payment service provider", "payment institution" and "electronic money institution." This law was amended on November 22, 2019. With the amendment, the Banking Regulation and Supervision Agency's regulation and supervision responsibilities in the payments area were given to the Central Bank of the Republic of Turkey. The rapid developments in the payments area necessitate this dual structure between the BRSA and the CBRT to be assembled under the CBRT in order to execute the decision-making procedure efficiently. This stemmed from improvements in the information and communication technologies as well as the development of new products and the applications in the payments area. In addition to that, the new payment services in Payment Services Directive 2 in the European Union were introduced to the Turkish legislation. In other words, an open banking framework in the payments area was established in Turkey. The objective of the law is to regulate the procedures and principles regarding payment and securities settlement systems, payment services, payment institutions and electronic money institutions.
Turkey	Turkey	Communiqué III-35/A.1 on Equity Based Crowdfunding ("Communiqué")	Public	Equity Crowdfunding	With the amendments made in 20.11.2017 in the CML, the CMB has been authorized to regulate investment-based crowd funding activities. Depending on its authority arising from the CML, the CMB has published the Communiqué III-35/A.1 on Equity Based Crowdfunding ("Communiqué III-35/A.1 on Equity Based Crowdfunding") in the Official Gazette No.30907 dated 3 October 2019. With Communiqué III-35/A.1 on Equity Based Crowdfunding, secondary legislation on equity crowd funding has been implemented. At this stage secondary legislation on a lending-based model has not been regulated yet. Communiqué III-35/A.1 on Equity Based Crowdfunding regulates the principles and procedures for equity-based crowdfunding, crowdfunding platforms to be included in the list of the Board and their operations, fund-raising from the crowd through the crowdfunding platform and control and supervision of the funds raised through the crowdfunding platforms.
Turkey	Turkey	Interactive Tax Office	Public	Other	The Interactive Tax Office provides taxpayers with access to their own tax information and the latest information about tax issues on https://ivd.gov.tr. Taxpayers can easily check pending obligations and the status and history of all procedures and services carried out online. They can interact digitally with the tax authority, conduct a number of various applications online and monitor the progress of these applications without going to the tax office. The online program is intended to reduce bureaucratic formalities and compliance costs and to increase voluntary compliance levels.
UAE	UAE	Several FinTechs and institutions Example of FinTechs: ADGM, Fintech Sandbox, DIFC, Central Bank	Private		There are several FinTechs and institutions that offer various services in the country, especially in DIFC. In addition, the usage of digital financial products and services is increasing in the mainland and the free zones of UAE. Digital solutions by FinTechs have been successful in offering a new alternative to the financing of SMEs, especially through the well-established ecosystem in UAE whereby the national and international actors have worked with each other closely to offer such services and products. In 2017, UAE had only a handful number of FinTech companies and now the country has more than 37 national and international companies serving the SMEs in UAE.

Country	Submitting Entity/ Country	Name of Company/Program/ Framework	Type of Intervention (Private/ Public)	Topic Area	Brief Description
UAE	UAE	Empower Small And Medium-Sized National Entrepreneurs (UAE National Program for SMEs)	Public	Digital Lending/ Digital Payments/Equity Crowdfunding	On the federal level, the UAE Law number (2) of 2014 on SMEs is the basis for the regulatory framework on the federal level, which includes the SME Council (a body that includes 15 federal and local entities in addition to the representatives of the private sector), the National Program on SMEs. On the local level, there are leading SME entities such as the Khalifa Fund for Development in Abu Dhabi and Northern Emirates, the Dubai SME, RUWAD, and Sheraa of Sharjah, in addition to the programs in all of the emirates. The program is designed to: • develop the general frameworks and guidelines that will provide expertise, training, and technical and administrative support in various fields to promote and develop SMEs • conduct periodic evaluations for the state of SMEs operating in the country • coordinate with federal and local government bodies and the private sector to market the products of the program's members
UAE	UAE	PPP Centre of Excellence (Abu Dhabi PPP initiative)	PPP	Digital Lending/ Digital Payments/Equity Crowdfunding/ Regulatory Sandboxes	Abu Dhabi is currently establishing a PPP Centre of Excellence that is designed to deliver PPP best practices in the Emirates of Abu Dhabi. This program is part of a wider initiative to encourage private sector involvement in housing, infrastructure and education projects. This initiative is formalized by a law that came into effect in 2019, which also formalized the creation of the Abu Dhabi Investment Office mandated to drive Foreign Direct Investments. The program's objectives include: • Increase foreign direct investment (FDI) to Abu Dhabi, and the wider Emirates • Provide SMEs with access to a working capital credit guarantee scheme • Provide a series of reforms aimed at stimulating investment, creating jobs, encouraging innovation and improving the quality of life • Identify key projects that will benefit from a PPP model The program is part of a fiscal stimulus package and is publicly funded for three years before transitioning into a model funded by low cost commercial financing.
UK	UK	P2P Regulation	Public	Digital Lending - Peer-to-Peer (P2P) Lending	Regulation of P2P lending in the UK is the responsibility of the Financial Conduct Authority (FCA), and it was brought into the regulatory perimeter in 2015. The FCA authorizes P2P platforms and monitors the market. There are about 65 P2P platforms in the UK—which provide a mixture of business, consumer and property lending. Article 36H of the Financial Services and Markets Act 2000 (making P2P lending a regulated activity). FCA then responsible for the regulation.

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