FINTECH AND FINANCIAL INCLUSION

A Funders' Guide to Greater Impact

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Acknowledgments

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EXECUTIVE SUMMARY

W**HAT WILL BE THE NEXT BIG FINTECH INNOVATION IN** financial inclusion? Many donors and impact investors today are looking to support new innovations to maximize their development impact. But with fintechs emerging all the time — many touting their potential to improve the lives of low-income, excluded customers with unproven business models — it is important for funders to be wary of hype and conduct due diligence in making investments and designing development programs.

There are measures that development funders can take to identify fintech solutions with the greatest potential and to structure their support in ways that help fintechs address common challenges:

- **Assessing and managing impact potential.** Each stage of the fintech lifecycle – *early, growth,* and *mature* – is associated with different impacts and risks. Development funders should carefully consider the type of impact they hope to achieve, as well as their risk tolerance, and then focus their support at the appropriate stage(s). For example, by focusing on early-stage fintechs, funders can help identify and nurture solutions that may one day be transformative for millions of people; however, this is not the stage to look for scale or sustainability.

Potential impact goals at different stages of fintech development

Addresses a market gap for excluded groups, but not fully sustainable or scaled yet	Measurable growth in use without creating consumer risks or market distortions	Sustainability and measurable positive customer outcomes (e.g., assets, capabilities, productivity, etc.).
Early Stage	Growth Stage	Mature Stage

In assessing and measuring impact potential at any stage, development funders should consider whether a fintech solution improves on existing solutions for low-income customers in terms of *cost, accessibility, product fit,* or *user experience*. Measurable indicators can be developed within each of these categories. Funders of more mature fintechs may broaden their frameworks to assess other impacts on customers.

- **Funding strategically.** Fintech funding should be structured to expand responsible innovation, facilitate learning in the market, and attract additional support from commercial and local investors. Fintechs at different stages of development benefit from different types of support. For instance, funding local incubators and providing technical assistance to early-stage companies can be effective ways to refine emerging business models. On the other end of the spectrum, grants or equity investments can help more mature companies deepen and generate evidence of impact on low-income customers.

- **Influencing the market.** Without the right ecosystem, fintechs cannot grow sustainably or reach low-income, underserved groups at scale. Unlike private investors, development funders are uniquely positioned to help build infrastructure, create a regulatory environment, and promote a capital ecosystem that enables promising fintechs to reach their full potential. Funders also have an important role to play in sharing impact evidence with each other and standardizing impact metrics.

Not every development funder can engage with fintechs at all stages or support all aspects of a thriving fintech ecosystem. Large organizations may have a more diversified approach, while others may be better off focusing on one type of investment, such as early-stage impact investing. However, every development funder can have a meaningful impact by funding strategically, sharing lessons learned, and working toward standard impact metrics.

INTRODUCTION

AS FINTECHS PROLIFERATE IN EMERGING MARKETS AND developing economies (EMDEs), they often target underserved customers with innovative, technologically-enabled financial services, applications, processes, and products. These innovations are of growing interest to international development organizations, including donors and impact investors. Many development funders have witnessed the scale and impact of previous fintech innovations, such as mobile money in East Africa and platform-based financial services in China and Southeast Asia. They now are looking for ways to support the latest fintech innovations and maximize their potential to impact the lives of underserved low-income individuals.

While a great deal of hype exists around fintech, including sweeping assertions of its impact on financial inclusion, there are genuine reasons for development funders to be excited about recent innovations in technology-enabled financial services. Earlier CGAP research based on pilots with 18 startups found initial evidence that some fintech business models have the potential to solve specific barriers to reaching low-income populations with financial services. For example, some fintechs offer smartphone-based payments apps with low data costs and storage requirements that facilitate use by segments with lower literacy. This reduces account dormancy and creates additional use cases for payments. Others use satellite data and machine learning to expand smallholder farmers' access to crop insurance and increase their resilience (Murthy et al. 2019).

CGAP's earlier research also suggests that development funders, alongside policy makers and other stakeholders, have an important role to play in helping these and other promising fintech innovations to reach the market and improve people's lives.

> **What do we mean by "fintech"?**
>
> The term "fintech" lacks a universally accepted definition. To reflect the way it is often used by funders, this paper generally employs fintech to mean the use of technology-based innovation in financial services. We refer to technology-based startups developing and bringing these innovations to the market as *fintechs*.

> **What do we mean by "development funder"?**
>
> We use the term "development funder" in this paper to denote organizations that provide funds—either as grants, investment, or debt—to those seeking to achieve development goals. This includes donors, foundations, development finance institutions (DFIs), development agencies, and impact investors.

Common challenges facing fintech today

Globally, fintechs often face three interrelated challenges that development funders can help to address through strategic, coordinated investments:

(i) Inefficient market conditions. Without the right infrastructure, policies and regulatory frameworks, and support from governments and civil society, fintechs cannot grow in a safe and sustainable way (Pazarbasioglu et al. 2020). India is a good example of how certain market conditions enable fintechs to thrive. Mobile technology, combined with the country's interconnected set of government-facilitated financial systems commonly referred to as the India Stack, has connected millions nationwide to the financial system and enabled a wide array of fintech business models to scale.[1] In markets where this type of infrastructure and support does not exist, fintechs struggle to scale beyond the most tech-savvy, urban, young, and affluent customers.

"For our business, the pace of the investor is everything. We prefer impact investors who can be patient with our slow-but-sure pace of growth."

—Founder of an early-stage lending company in India

(ii) Accessing capital at all growth stages. Fintech growth depends on access to the right kind of capital—whether early-stage capital to prove the viability of a business model, growth capital to achieve scale and sustainability, or debt finance to fund new credit portfolios. These different types of capital are often missing in EMDEs or are accessible only to the most well-connected entrepreneurs. Fintechs describe funding as their biggest challenge, especially in the early and growth stages.

(iii) Reaching and impacting poor customers. It takes time even for fintechs with the best of intentions to impact large numbers of low-income customers. When capital infusions come on the condition of a quick return, it can be even more difficult for fintechs to be inclusive. In certain cases, the drive for profit can even lead to consumer protection risks. Customer impact in an individual market rarely depends on the rapid success of a single company but on the emergence of a wide variety of firms serving several customer segments over time.

Addressing challenges with a strategic, coordinated funding approach

Over the past decade, both commercial investors and development funders in EMDEs increasingly have invested in fintech. Funding directly and indirectly flows to the sector in many ways, whether to support individual fintechs or to create an enabling environment for the fintech ecosystem through regulatory reform, infrastructure development, or market research (see Figure 1).

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1 India's *Aadhaar* biometric identification system provides the foundation for an integrated set of application programming interfaces (APIs). This "India Stack" manages secure user consent to share data, and it enables remote identification and authentication (e.g., eKYC for onboarding) for account openings and financial transactions.

FIGURE 1. **Funding flows to fintech**
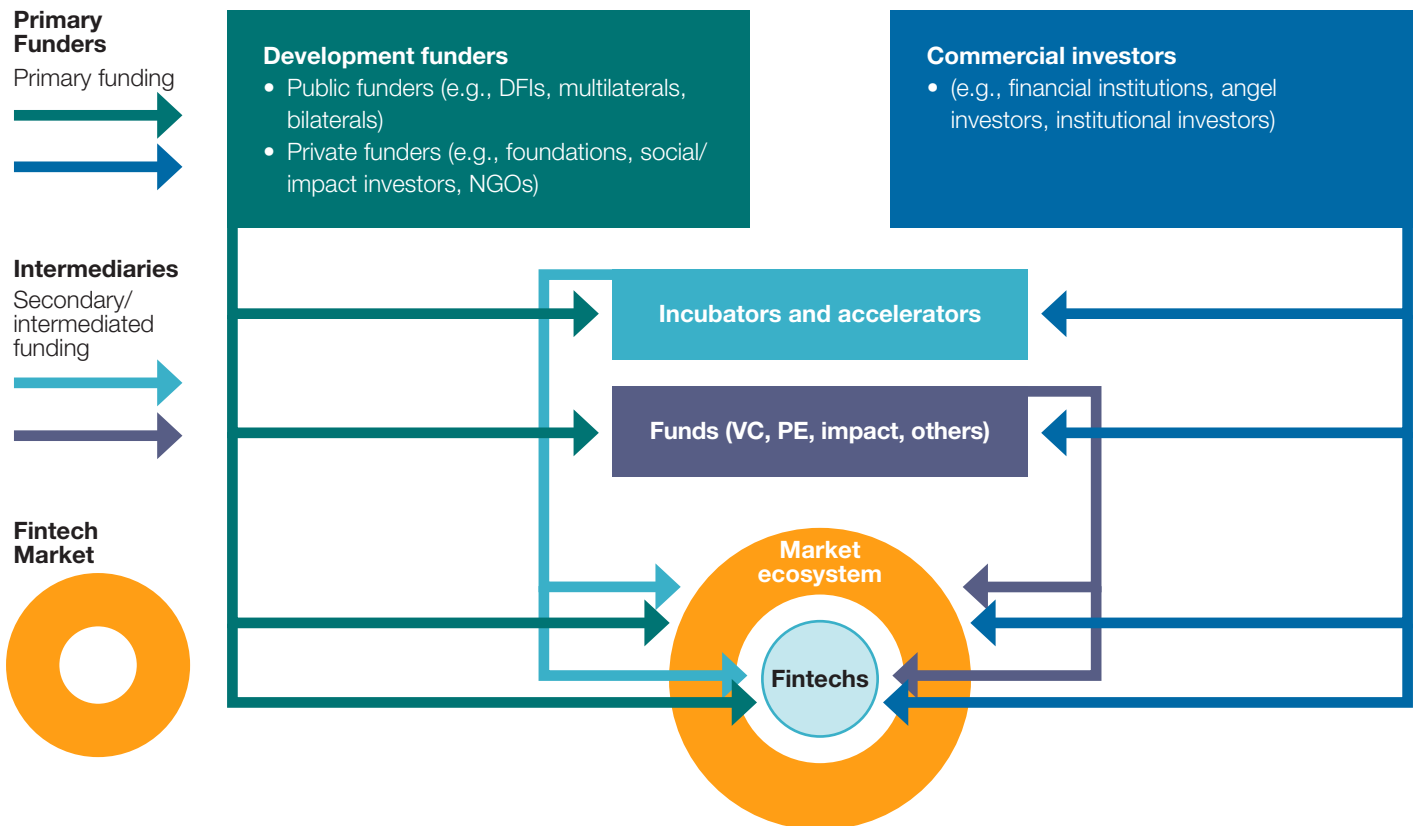
The amount of money invested in fintech has been on the rise in recent years. According to KPMG, global investment in fintech grew from $51 billion in 2014 to $135.7 billion in 2019 (the COVID-19 pandemic slowed investment in 2020).[2] However, little data exists on where development funding is flowing relative to commercial funding—and the impact it may be having. It is still unclear whether development funding complements commercial funding, builds a more conducive environment for commercial investors to enter, or enables fintech to reach low-income populations.

Recent research from CGAP and MIX, a global data resource on the funding and impact of inclusive financial services, has begun to shed light on these questions.[3] **Analysis of data from the world's largest development funders and nearly 100 fintechs shows that funding from both commercial investors and development funders targets mature companies with proven business models.** The fintechs overwhelmingly are payment wallets and lenders, most likely because those products have been in the market longer and have a clearer pathway to profitability.

Funding for more diverse or riskier innovations is more difficult to find (CB Insights 2019; Partech Africa 2020). Despite growing development funding, it is unclear whether related

2   See KPMG International (2020). Figures are available for global commercial funding of fintech, but they include China, developed countries in Europe, and the United States. Consolidated numbers for EMDEs where development funders invest and engage are difficult to find.
3   See: https://www.cgap.org/research/slide-deck/role-development-funders-supporting-inclusive-fintechs

crowding-in of local or international commercial capital exists, especially in Africa. While markets like Indonesia already appear to be saturated by commercial investors, impact-focused, early-stage fintechs still struggle to find early funding. CGAP's interviews with fintechs show that support beyond funding—such as access to capital markets and technical assistance—is still lacking, especially among early-stage fintechs.

Development funders will need to pursue a coordinated, long-term approach to fill funding gaps and better address the challenges fintech currently faces. The microfinance sector stands as a useful example of how this can be achieved. Like fintech today, in its early days microfinance attracted a wide variety of commercial investors and development funders. As the sector evolved, their approaches became more coordinated. Development finance institutions (DFIs) boosted investor confidence through microfinance investment vehicles (MIVs) and attracted more commercial and impact investors. This led to a period of sustained growth that resulted in $17 billion worth of investments in microfinance in 2018 alone (Symbiotics 2019). Further, donors supported development of standards and data reporting, and influenced financial regulations and financial inclusion policy in countries to formalize microfinance. Many countries now have regulatory frameworks that support the operation of microfinance, and many MFIs have become licensed deposit-taking institutions.

We see a similar opportunity in fintech today. Through coordinated action, certain market gaps can be tackled: a lack of capital in Africa, market distortions in overcrowded Asian markets, lack of reliable information on impact, and, perhaps most crucially, insufficient support for early-stage innovation. Engagement with fintech companies sits outside the core funding instruments of most development funders because fintechs are often too small and/or early stage. As a result, the impact of fintechs on poor people remains largely hypothesized. The COVID-19 pandemic has demonstrated that the right digital innovations can have a critical impact on poor people and increase their resilience to shocks (CCAF, World Bank Group, and WEF 2020), and many development funders are now looking for ways to maximize fintech's impact. It is an opportune time to recalibrate efforts.

Focus Note overview

This Focus Note presents a vision for how development funders can support fintech in EMDEs to enable innovative business models that provide greater impact for poor people. It describes how development funders can structure investments and work toward a coordinated approach with other development funders. We offer guidance in three main areas that would help address the challenges faced by fintechs, as previously outlined:

1. **Assessing and managing the impact potential** of fintech investments

2. **Strategically funding** to achieve impact and business potential

3. **Influencing the market** to support an ecosystem of fintechs that serve low-income customers

Guidance presented in this paper is based on interviews with international donors, foundations, DFIs, and development agencies, as well as industry experts and researchers. We also conducted four country-level assessments of fintechs in India, Indonesia, Mexico, and Nigeria. Across these markets, CGAP interviewed 60 fintechs at different stages of growth. We interviewed local investors and local representatives of development funders (both mature and early-stage investors, where possible), and other ecosystem stakeholders such as incubators, accelerators, fintech associations, and industry bodies. All the research for this paper was conducted between 2018–2020. Although this paper primarily is intended for development funders seeking to maximize their impact in the fintech sector, incubators, accelerators, and commercial investors may also find it useful. Appendix C provides additional details about our methodology.

SECTION 1

ASSESSING AND MANAGING IMPACT POTENTIAL

ASSESSING THE BUSINESS POTENTIAL OF AN EARLY-STAGE fintech company can be challenging, and determining its potential impact on poor people is even more difficult. Funders should set impact goals that are suitable for each stage of development (see Figure 2).

FIGURE 2. **Potential impact goals at different stages of fintech development**

| Addresses a market gap for excluded groups, but not fully sustainable or scaled yet | Measurable growth in use without creating consumer risks or market distortions | Sustainability and measurable positive customer outcomes (e.g., assets, capabilities, productivity, etc.). |
| Early Stage | Growth Stage | Mature Stage |

A variety of impact frameworks exist to help impact investors, DFIs, and other development funders identify and measure these potential impacts and risks.[4] These tools are applicable to the wide range of goals and outcomes many development funders are working toward, such as the United Nations Sustainable Development Goals (SDGs), and environmental, social, and governance (ESG) principles in general. Most development funders incorporate one or more of these frameworks into their analysis of impact. However, most frameworks center on a single program, output, or investee's success in reaching customers.

CGAP's recent work on the evidence and impact of financial inclusion points to the need for a deeper theory of change and a more holistic view of impact (El-Zoghbi 2019). If development funders want to better understand and capture the impact of their fintech investments, they must adopt a theory of change that moves beyond the initial effects of an investee's financial services. **Funders must look beyond how financial services**

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4   See Johnson and Lee 2013, IFC 2019, and GIIN 2019 frameworks.

expand access and use, toward deeper, longer term outcomes on people's opportunity to fulfill their goals or resilience to shocks.

Different types of development funders may have differing impact goals. Commercial investors often are more focused on financial returns but want to ensure that basic do-no-harm criteria are fulfilled. DFIs and impact investors may look to fill key market gaps and market exclusions through their investments. Rather than funding individual fintechs, donors may choose to focus on enhancing the fintech ecosystem. However, if donors and investors can link their investments to the specific effects fintechs have on poor people, a level of uniformity and rigor could be maintained across the industry.

Even in a nascent industry like fintech, development funders should consider a long-term perspective on impact when assessing a potential investment and define impact indicators that measure success across different growth stages of firms—and across their entire portfolio. Indicators should be flexible and simple enough that they can apply to young, early-stage fintechs, but also measure the deeper impact of growing or maturing fintechs. For example, an indicator such as "use" could expand from initial registration and first use (e.g., loan application and disbursement) to deepening use (on-time repayments, repeat loans, growing deposits, etc.) to sustained customer relationships (customer relationship tenure, customer referrals, etc.).

> *"Impact is only an assessment metric in most deals. It needs to go deeper than that."*
> —Impact investor, India

Impact and risks at different fintech stages

There is a general understanding that a fintech company's lifecycle moves across three stages: from early, to growth, and then to maturity (see Figure 3).[5] Development funders should carefully consider the type of impact they hope to achieve and tailor their efforts on the appropriate stage(s).

EARLY-STAGE IMPACT
Identifying solutions that address market gaps for excluded groups

A wide range of early-stage fintech models offer exciting possibilities, but many do not survive. Rarely do the survivors reach any kind of impact in the early years of operation, since they may often have to prioritize financial viability and scale over impact. Venture capital plays a key role, not only to develop a business that produces certain financial returns, but also investing in helping firms develop their impact potential. Venture capital, however, is often difficult to find in less developed markets. Yet funding fintechs at the early stage is important because it enables the launch of business models that may impact development. Experimentation carried out by early-stage businesses also reveals important lessons for markets about what works and what does not. These insights can benefit the industry at large.

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5   More complex classifications exist across investment rounds (Series A, B, etc.) and type of capital (debt, equity, venture capital, etc.), but a split like this is an entry point into those distinctions.

FIGURE 3. **Assessing the impact potential of fintech through business model stages**

Development stage	Early Stage (Seed or Series A)	Growth Stage (Series B and C)	Mature Stage (Series D or higher)
Impact goal	The fintech addresses a market gap for excluded groups	The fintech and others like it can reach scale without posing consumer protection risks.	The fintech and others like it are sustainable and can demonstrate positive customer outcomes with excluded groups.
Example A savings app offers simple features for platform workers to save and manage their income	60% of customers take less than a minute to deposit into their accounts and two thirds conduct more than 3 transactions per month.	30% of customers increase their balance over a year. The app shares data for credit scoring purposes, but enables feature to request customer consent.	5% of customers used savings to purchase new assets for their business. 6% used savings to pay for a health emergency, and 50% used savings for daily household expenses.

Most early-stage fintechs claim to bring new solutions to an existing customer problem. In some instances they focus on traditionally excluded groups. In the four countries CGAP researched, early-stage business models generally shared the following characteristics:

- *Experimentation with new forms of scoring or underwriting* for credit products, such as using satellite data for agri-insurance, value chain analysis for micro and small enterprise (MSE) loans, and tracking savings group transactions for consumer loans.

- *Introduction of new features and delivery mechanisms* for conventional products, especially those aimed at serving excluded segments.

- *Balance between digital and in-person customer interaction*, especially by creating the on-the-ground partnerships that are key to serving excluded segments with complex products.

In Nigeria, PiggyVest is an example of an early-stage fintech that brings savings and investments to a segment typically excluded from wealth creation opportunities. Its innovative use of an intuitive app and easy-to-use features help customers create savings or investment wallets differentiated by goals or risk. A similar model has scaled considerably in the United States, but this type of fintech business model is still finding its feet in markets like Nigeria where banking penetration is much lower.

Another example of an early-stage model is Toffee, an innovative insurance delivery fintech in India that acts a bridge between low-income customers who may be new to insurance and traditional insurance companies. The company provides simple insurance policies

to protect customers against the risks most relevant to them, such as dengue, malaria, hospital cash, bicycle damage, and theft. Simplified sign-up processes on a mobile app and at the point of sale expedite easy access. See Appendix A and Appendix B for additional examples.

Given the nascency of their business models, development funders should pick impact indicators that reveal how early-stage firms can solve a market gap for excluded groups. **The focus of this stage is that fintechs develops services that satisfies a clear market demand by excluded and underserved segments.** In contrast with existing solutions, these services can show gains in cost, accessibility, fit and/or experience, all of which can make financial services work better for low-income users (see Figure 4).

The four criteria of impact in this framework apply to fintechs at all stages. As fintechs mature they must also have deeper impact on the market and their customers' lives- we will describe these deeper impacts in the next sections. But at the minimum, they must excel in one of these areas of customer value.

Early-stage fintechs have the potential to create multiple effects. For instance, a fintech that has figured out how to reduce the cost of offering agricultural insurance to smallholder farmers concurrently may expand access. The sample scorecard in Box 1 may be useful to development funders looking to assess impact of an early-stage fintech.

FIGURE 4. **Measurable ways fintechs at every stage of growth can impact poor people**

Cost	Access	Fit	Experience
Makes services more afforable	**Makes financial services more accessible**	**Makes financial services better suited to the needs and wants of underserved customers**	**Offers an improved user experience**
Lowers operating costs	Expands eligibility through innovative means of CDD	Makes financial services better suited to the needs and wants of underserved customers	Has product features that are easier to access, understand, and compare
Lowers end user fees	Expands eligibility through innovative means of risk assessment	Addresses a customer need not served by typical products	Has an interface easier for most customers to understand and use
Offers more flexible payments	Requires less interaction at physical transaction points	Aligns better with the need and wants of underserved customers	Delivers clearer value to users
Reduces the need for expensive devices	Expands or improves the distribution of physical transaction points	Allows greater customization to different contexts, user needs, and preferences	Helps users identify, understand, and resolve problems
Requires less or cheaper connectivity		Has a higher degree of suitability for target customers	Gives users control over data
Reduces the need for collateral		Enjoys higher general trust and satisfaction from users	Stronger technical security

BOX 1. **Sample scorecard to assess the impact of an early-stage fintech**

To develop an early-stage fintech impact scorecard, development funders can define measures that have potential for marginal, low, moderate, and high impact upon the four criteria in the fintech impact framework: cost, access, fit, and experience.

Sample scoring criteria

	Marginal impact	Low impact	Moderate impact	High impact
Cost	No impact	**<10%** cost reduction	**10–30%** cost reduction	**>40%** cost reduction
Access	No impact	**Some** increase in access for **existing** segments	**Large** increase in **access to existing** segments; **some** increase for **excluded groups**	**Increased access for both existing and excluded** segments
Fit	No impact	Addresses a problem felt by a specific low-income segment, with **low levels of uptak**e among it	Addresses a problem felt by a specific low-income segment, with **moderate levels of uptake** among it	Addresses a problem felt by a specific low-income segment, with **high levels of uptake** among it
Experience	**Negative** net promoter score	Net promoter score **below X**	Net promoter score **between X and Y**	Net promoter score **above Y**
	Other metrics may be more suitable. Experience could also be measured by successful transactions and quality of complaint resolution.			

Sample impact assessment scorecard performed for Übank, a Mexican fintech

Übank is a white label personal finance automation API for banks and financial institutions that helps people automate savings based on their lifestyle and everyday expenses.

	Prospective impact score	Rationale
Cost	Marginal	Based on existing bank account infrastructure, does not impact
Access	Low	Improves access to savings for existing banking customers
Fit	Moderate	Embeds savings practices common to many customers in low-income segments. Additionally, enhances women's ability to save in a private way
Experience	High	Experience draws excitement in saving, net promoter score (NPS) expected high

(Continued on next page)

BOX 1. **Sample scorecard to assess the impact of an early-stage fintech**
(continued)

Visual representation of an impact scorecard

Development funders may find it useful to create a visual representation of an impact scorecard that juxtaposes current and projected impact potential. This may help distinguish between the impact potential of a fintech at the early stage and the full potential it expects as it launches and scales. For example, an early-stage pilot may demonstrate only minor improvements to user experience. However, greater improvements may be expected in the future as the fintech grows, attracts more investment, and acquires more user data to inform changes to the service.
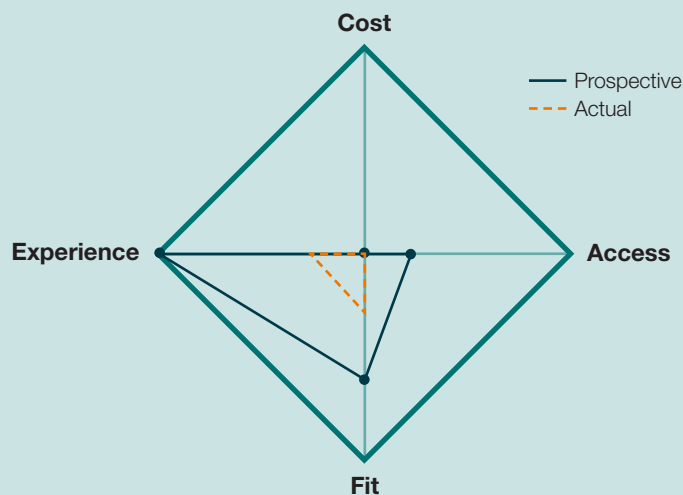
It is likely that an early-stage fintech may not prove successful on every indicator, but lessons learned from its market launch should aim to prove the basic assumptions of its impact thesis. If success is not achieved, some early-stage fintechs pivot to a different idea. The pivot may not be a departure from impact potential; it may in fact give the firm a better shot at impact. It also is possible that a pivot would benefit the business model but have a negative effect on its impact potential. Funders must remain alert to these kinds of pivots.

GROWTH STAGE IMPACT
Reaching scale without posing consumer protection risks

Growth stage fintechs have proven the basic assumptions underpinning their business model but have yet to scale to achieve their full potential. Their customer base may be steadily growing, but their track record is not long enough for the firm to be deemed sustainable. Today, digital credit models seem to dominate this category, along with payment wallets and payment aggregators.

Achieving scale at the growth stage is key from a business point of view, but development funders must continue to monitor impact indicators. Indicators for cost, accessibility, fit, and experience (see Figure 4) can remain the same at this stage but may expand to more

ambitious targets, including a larger customer base, new segments, or new features or offerings. For example, if a development funder was measuring general uptake among low-income communities at the early stage of MSE credit fintech and continued its support into the growth stage, it could then measure loans approved for women-owned firms or loans approved in excluded sectors like transport.

> *"Replicability of models is a focus for us. Whether a group of them can emerge to be sustainable is key."*
> —Global impact investor

Growth stage companies typically have been in existence for a period of time and therefore have enough customer experience data for development funders to ssess whether consumer protection or systemic risks have emerged. CGAP's 2018 research into digital consumer lending models highlighted emerging risks for customers and asked financial inclusion practitioners to reexamine their enthusiasm for the model (Izaguirre, Kaffenberger, and Mazer 2018). Alongside other research, this research has generated reasonable caution and analysis in the development funder community over the digital credit model. Development funders with investments in growing fintech models should assess companies in their portfolio for this type of risk.

An important growth stage consideration, especially for DFIs: Replicability of the underlying business model

At the growth stage, development funders may also consider a fintech's connection to its ecosystem and therefore assess the replicability of business models.

Replicability of a business model refers to the ability of additional players to create a company using the same model (or variations on it) in the same or other markets. Complex, one-off products that only work in a certain region may be useful for a particular market and its customers but offer limited impact across a portfolio of fintech investments. Thinking about replicability can help development funders identify how a growing firm or set of firms with the same business model can increase market competition or improve consumer choice—both important aspects of achieving financial inclusion.

Replicability may be most relevant to DFIs since they structure direct and indirect investments to holistically build a market. Replicability of a business model helps build market confidence and influence investment from other local funders, which is a key goal for these stakeholders.

M-Shwari, a digital credit product that continues to experience steady growth in East Africa, is a good example of a replicable business model. Within three years of its launch, ten new digital credit products also emerged in the market, including products from firms like Tala and Branch that also have substantially scaled since. The industry has yet to define and codify which of the product's key features—a combination of alternative credit scoring and rapid credit history building—contribute to making it work.

Kopo Kopo in Kenya stands as another example. The company specializes in solutions that allow merchants to receive payments from digital wallets. Scaling up their customer base has been a difficult goal for many digital payments providers across markets. Early lessons learned allowed Kopo Kopo to iterate, then introduce enhanced value-added services that would help merchants manage their businesses. Kopo Kopo ultimately pivoted its business

model to offer merchants credit based on observable merchant payments. Safaricom, also based in Kenya, took lessons from the Kopo Kopo model. Although far from a sustainable company in its early years, Safaricom scaled throughout the country with a service called Lipa Na M-PESA, which now has 200,000 registered merchant customers (Safaricom 2020).

Some business models naturally evolve into quasi-monopolies (e.g., digital wallets), making replicability impossible in a market and sometimes across regions. But the ubiquity of wallets means they can be a building block to developing other businesses that further improve the market. For example, MTN Uganda's mobile money wallet launched an open API portal without support from development funders. The API eases third-party service integration and makes it easier for wallet customers to gain access to a wide variety of services .[6] The enhancement does not change the fact that MTN's wallet remains a dominant offering in that market. However, the brand's investment in an open API portal may transform its wallet into a building block for a range of other services.

Replicability may not always spontaneously occur within a given market. Donors and DFIs therefore may consider more intentionally supporting second movers or addressing the external barriers that sometimes prevent replicability. Development funders may also consider replicating something similar to the MTN example in other markets. It is important to note, however, that goals like these take time to achieve and would require development funders to make longer-term commitments to the end goal.

> *"'Venture capital' investors in our country hesitate with early- stage fintechs. They feel like risks are too high, and they don't like risks."*
>
> —Fintech entrepreneur in Mexico

MATURE STAGE IMPACT

Achieving sustainability and positive customer outcomes with excluded and underserved segments

Models at the mature stage have achieved certain scale and have proven financial sustainability, setting more defined expectations for financial risk and return. Payments companies dominate in the markets we studied, especially remittance companies and payments apps and wallets. In rare instances, an insurance company like PolicyBazaar in India may reach unicorn status. Large credit companies that serve numerous EMDEs, such as Branch and Tala, or those that serve a single, large market, such as Aye Finance in India, would likely be included in this group.

Mature stage companies are influential and will likely attract the funding they need from commercial sources, and, as a result, be less dependent on development funding. However, many mature fintechs, whether payments or credit, despite their scale, have yet to demonstrate ability to serve excluded and underserved segments in their markets. A variety of reasons are behind this, including a lack of proper regulation and infrastructure to support viability at the bottom of the pyramid. Commercial capital is unlikely to solve for such gaps and mature fintechs may not spontaneously fill them.

6   For further information about MTN's MoMo API, see: https://momodeveloper.mtn.com/

Public development funders, therefore, have reason to directly engage with mature fintechs—but only if support is explicitly tied to taking products to the excluded bottom rungs of the pyramid. Mature stage companies have served their customers the longest, and development funders should measure not only the longitudinal impact of products on cost, access, fit, and experience, but also look for overall improvements in opportunities for customers and customer resilience.

Credible data about the overall impacts of mature payments services is not widely available although there are some exceptions. A recent IMF study used granular data on transactions from Paytm, one of India's largest mobile money service providers with over 400 million users. The study discovered that Paytm use increased resilience by dampening the impact of weather shocks on economic activity and household consumption (Patnam and Yao 2020). Specifically, while rainfall shocks had a significantly negative impact on economic activity, proxied by satellite data on nighttime lights, the effect was partially mitigated in districts that used mobile money, reducing it by an average of 23 percent. The authors observed that a 10 percent increase in mobile money use in districts hit by a rainfall shock reduced the shock's negative effects by 3 percent. In addition, a targeted intervention that emerged from the study showed that firms that receive payments through Paytm improve sales by approximately 26 percent after six months of use, relative to firms that do not receive payments through Paytm. Similarly, research by Jack and Suri (2014) in Kenya showed that mobile money had a significant impact on the ability of households to share risk, producing an average welfare benefit of 3 to 4 percent of total income.

Despite studies like these, not enough is known about the welfare effects of mature payments companies today. Development funders should support fintechs that can help bring unbiased evidence of deeper outcomes and welfare effects on customers into the public domain. Neutrality and rigor are key, and perhaps may mean relying on independent researchers or implementers on the ground to produce reliable insights.

Beyond the sphere of payments, even less evidence exists. Digital credit products may expand access to capital for individuals and MSEs, but whether they reach them with the right types of loans for their goals is not clear. For instance, M-Shwari type working capital loans are widespread, but it is not clear whether small firms in Kenya can readily access bigger loans for asset finance or expansion using these new fintech credit products. Moreover, whether these loans lead to welfare effects or whether new credit scoring models are equitably available to all socio-cultural segments (e.g., minorities, women-owned businesses) is also not clear due to lack of data and research.

The different stages fintechs pass through means that development funders must sequence their measurement of impact. **A focus on business model stages helps sequence impact from basic to deep, across a diverse portfolio of investments. It also allows fintechs the space to achieve goals sustainably, only being held accountable to targets they are capable of fulfilling.**

SECTION 2
FUNDING STRATEGICALLY

O**NCE A DEVELOPMENT FUNDER HAS MADE AN IMPACT** assessment and has decided to support fintech, funding must be structured to expand (i) responsible innovation, (ii) learning in the market, and (iii) participation in investment by commercial and local investors. This section presents ideas on how funding can be catalytic for market development. Similar to conducting an impact assessment, a fintech's stage of development is an important consideration in structuring funding. As Figure 5 illustrates, fintechs at various stages generally benefit from different types of support.

FIGURE 5. **Funding and support for fintechs at various stages**

Development stage	Early Stage (Seed or Series A)	Growth Stage (Series B and C)	Mature Stage (Series D or higher)
Funding Goals	Refine business models and nurture innovative businesses with impact potential	"Crowd in" commercial funding to allow for scale and growth	Deepen and generate evidence of impact on excluded and underserved segments
Instruments	• Funding for local incubators and accelerators that support early-stage fintechs • Contribute to early-stage impact funds • Small grants and TA directly to fintechs to refine their business model	• Debt capital for lending companies • Patient capital for riskier models in savings and insurance • Blended finance vehicles to absorb risk and "crowd in" local debt and equity funding	• Grants or equity investment, but only if tied to deepening impact at the bottom of the pyramid and evidence of impact

EARLY-STAGE FUNDING

Refine business models and nurture innovative businesses

Early-stage models deal with newer products or target excluded segments. They may have new forms of scoring or underwriting that require patient capital to test assumptions and refine business models. Their business models may balance tech and touch, which may be the key to effectively serving excluded segments, but they tend to scale more slowly. Alternately, they may include new features or means of delivery for traditional insurance and savings products, which could indicate that they would take a long time to become profitable. Many early-stage models—especially those that target the most excluded groups— therefore represent risky investments. They either have a significant chance of failure or a longer horizon before developing into a viable business.

This is precisely the type of funding need development capital can fill, and it is where the social payoffs can be most significant. Fintechs serving farmers may require several seasons of testing to confirm the validity of their credit scoring or insurance underwriting models. Traditional venture capital may not be suitable for funding this type of product development. But, if successful, such products can have development impact that would be substantial as they expand access for smallholder farmers—one of the most vulnerable and financially excluded groups across the globe.

Venture capital investors typically find it hard to assess new business models in EMDEs. They often refrain from investing at this stage and, as a result, worthy innovations either take too long to launch or never make it to market. **Early-stage funding may not lead to predictable returns, but here a development funder's objective would be to invest in an innovation pipeline that addresses unsolved financial inclusion challenges and expands industry-wide learning.**

Donors and DFIs may not have adequate tools to assess the viability of business models at such an early stage. They instead could provide funding to early-stage incubators, accelerators, and seed investors, or de-risk their operations to create a pipeline of opportunities for the future. Early-stage funds in the financial inclusion space, such as the Accion Venture Lab, continue to play an important role in this area.

CGAP's analysis shows that a significant portion of fintech support from development funders flows to intermediary funds (Baur-Yazbeck 2021). This works well for development funders that do not have the capacity to directly provide early-stage funding grants.

Development funders also could consider collectively setting up early-stage investment units that operate similarly to a venture capital fund but align to development impact. An example of this is the Catalyst Fund, a global inclusive fintech accelerator jointly funded by the UK Department for International Development (DFID) and JPMorgan Chase & Co, and managed by BFA (Bankable Frontier Associates) Global.[7] Through grants and technical assistance (TA) plus access to future investors, the Catalyst Fund supports young EMDE fintechs targeting low-income communities and MSEs, preparing them for future scale and sustainability. The advantage of such early-stage funds, whether for grants or seed

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7   For additional information about the Catalyst Fund, see: https://bfaglobal.com/catalyst-fund/

stage capital, is enabling development funders to better coordinate market-level strategies between innovation, growth, and exits, and to provide visibility on emerging innovations for growth stage investments.

DFIs and donors can also directly build the technical capacity and appetite to fund early stages. In this case, small grants and TA would allow promising early-stage companies to pilot, test, and get their ideas off the ground—without the pressure of return on investment. If pilots and tests achieve success because of the funding, development funders could disseminate results and thus attract additional private capital to the companies for future growth.

GROWTH STAGE FUNDING

Crowd in commercial funding to allow for scale and growth

As companies scale from the early stage to the growth stage, their funding needs change. Even those previously successful at raising funds may face a scarcity of funds and veer dangerously toward failure. Often referred to as the "valley of death" in venture capital, this shift is particularly difficult to navigate in EMDEs. For example, credit companies often find it hard to attract debt from local banks and financial institutions because lenders expect an established track record as well as collateral.

DFIs are especially helpful in filling this gap because they responsibly enable access to debt capital or create incentives for local banks to lend to these providers. CGAP research shows that today only 11 percent of direct funding by public development funders is debt capital to fintechs (Baur-Yazbeck 2021). Several growth stage companies interviewed by CGAP credit DFIs with helping crowd in private debt capital. **Increased provision of such debt capital for responsible, growing companies would help crowd in local investors and financial institutions.**

Insurance and savings models nearing the growth stage may also face unique challenges. They may have been successful in their quest for seed funding but when growing toward Series A and B rounds struggled to attract investment. The newness of these models and the uncertainty of regulatory openness to the models means that many face existential threats. Since setting up a savings or insurance company often requires high compliance and licensing costs, these fintechs often act as distributors for banks or insurance underwriters. Those that serve low-income segments rely more heavily on touch than tech to reach excluded groups. For these reasons they tend to take longer to become profitable and represent some risk due to their business model's dependency on partnerships.

Commercial investors do not have adequate examples of models such as these scaling with lower-income customers in EMDEs, but DFIs or donors could help crowd in capital to these growing models outside the payments and credit sphere. Through patient capital or special-purpose investment vehicles that only expect returns after a longer-than-average duration, donors and DFIs could catalyze complex insurance and savings business models to move beyond early growth to the mature growth stage.

Blended finance models are another solution for funding complex or risky fintech models. These models strategically use development (often donor) funding to mobilize additional finance (commercial capital) toward the SDGs in developing countries. Blended finance is an umbrella term for many different types of funding instruments, and a powerful tool development funders can use to crowd in additional investment (Scola, Moretto, and Lahaye 2018). It can include the guarantees, junior capital, or technical assistance that accompanies investment, but its main goal is to help absorb risk in a way that influences private investors to commit even when they consider investment risky. This can take a growth stage company to the mature stage where the model is proven, risks are known, and donor funding is no longer required since commercial capital can fill needs. For example, blended finance could fund agriculture-focused fintechs as they test, scale, and attract private capital in the long term. Appendix B provides additional examples of fintech for agriculture.

MATURE STAGE FUNDING

Deepen and generate evidence of impact on excluded and underserved segments

If public development funders engage with mature fintechs through grants, equity, or debt-based investments, they should first ensure their funding can guarantee focus on impact goals by (i) taking services further down the pyramid to the most excluded groups, or (ii) ascertaining impact beyond service delivery toward outcomes on customers lives. This is not always easy if other investors do not see the viability.

Grants or equity investments that leverage the scale of mature companies to reach excluded and underserved segments can be catalytic. If successful, such instruments could encourage crowding-in for a certain type of growth that is not considered profitable in private markets. They could also influence countries where the right regulation or infrastructure for these types of models does not exist. However, development funders will need to be extremely careful that, even if impactful, such funding does not create market distortions or provide an unfair competitive advantage to one player.

In addition to directly funding fintechs, market interventions such as better regulation and infrastructure, crowding-in of local capital, sharing lessons, and building standards indirectly benefit the scale and impact of fintechs across all stages of growth. Public development funders and donors can leverage their position in the industry to influence and support market development and insight generation. This topic is covered in the next section.

INFLUENCING THE MARKET

W**ITHOUT THE RIGHT ECOSYSTEM FINTECHS CANNOT** sustainably grow. But even if they do, they may not be able to reach underserved lower-income segments. First, development funders (especially donors and DFIs) must direct some of their focus toward creating a regulatory environment and capital ecosystem that allows for growth and impact. Second, they must individually or collaboratively promote greater sharing of lessons learned. Unlike private investors, development funders are well poised to take on this additional dimension of funding and provide the diversified support that would advance social and public good. Both areas of intervention are discussed below.

Support market development

Enabling policy and infrastructure that allows for reach among low-income communities. Donors and DFIs should collaboratively support a variety of enablers that allow fintechs to more effectively reach poor populations (see Box 2). In these projects, development funders bring technical credibility, influence over decision makers, and collective voice and influence—all toward the goal of creating policies that smooth the operations of fintech companies and protect consumers at the same time. Development funder interventions could also strengthen the financial infrastructure that helps services reach remote and often excluded customer segments. CGAP's 2017 Funder Survey showed that funders are indeed increasing their support to DFS infrastructure (Tomilova and Dokle 2019).

On the surface the role of funders in this area seems straightforward: They provide the infrastructure that fintechs use to increase their value proposition and grow their markets, clients benefit from improved financial services, and financial inclusion takes off. However, the process usually is more complex than that. There is a risk that funders with country-level access to regulators and policymakers are not the teams that have the detailed technical expertise required to guide local stakeholders. Therefore, development funders would be best advised to consider their input in the broader ecosystem of the country

BOX 2. **Key enablers for fintech**

Widespread telecom connectivity and agent distribution. Fintechs rely on smartphones and data services as an inexpensive way to reach customers, although in most markets smartphone penetration is concentrated in higher- and middle-income segments. Robust agent networks enable customers to cash in and cash out—especially if they live outside large urban centers. However, these networks must be structured with the right incentives to ensure viability and allow fintechs to leverage them. While both India and Indonesia have expanded agent networks, regulation in Indonesia distinguishes between agents for banks and agents for fintechs. This limits fintech reach in rural areas, which primarily are covered by bank agents.

Easy eligibility and identity verification. High costs to enroll and verify customers can limit how many customers a fintech can serve—and how inexpensively. Many markets lack a single, reliable digital identity system for the entire population. For example, Nigeria's Bank Verification Number (BVN) is the closest form of unique ID in the country. Since it requires a bank account, it is inaccessible to the over 60 million unbanked Nigerians. It is promising that many EMDEs are building digital ID systems. Yet compared to banks, fintech companies in many of these markets do not have ready access to ID databases. As a result, many fintechs face high costs for customer due diligence (CDD), which ultimately is passed on to the customer.

Proportionate risk-based CDD prevents restrictive measures that unnecessarily exclude customers from low-risk services and transactions. These restrictions disproportionally harm low-income customers and excluded groups.

Real-time, simple interoperable payments. Fintechs succeed in markets that enable easy and seamless payments between people, not just for payment wallets but for all fintech services where a customer or a business needs to exchange value

with someone else on a regular or a one-time basis. E-money issuer (EMI) licenses that allow new nonbank entities to offer payments services to customers who may be underserved or excluded by banks are now available in many markets. Yet in some markets, the surrounding regulations can lead to high operating costs for fintech companies and may be prohibitively restrictive. In Nigeria and India, nonbank entities can operate as "payment banks" but the high initial capital requirements and the inability to intermediate funds create a steep barrier to entry.

Payments interoperability enables quick and inexpensive fund transfers between customers with different wallets and bank providers. It creates efficiencies and network effects that reduce operating costs for fintech providers. Yet full interoperability is a complicated endeavor that has yet to be attained in many markets (Nègre and Cook 2019). Of the four markets we surveyed, India had digital payments interoperability through the Universal Payments Interface and the India Stack, while Mexico had the SPEI funds transfer system for interconnecting bank accounts. It also recently launched an interoperable payments platform called Cobro Digital (CoDi).

Open application programming interfaces (APIs) offer a complementary solution for all three challenges: access, eligibility, and ease of transacting. Open APIs can expand use cases for existing financial services providers (FSPs), reduce operational costs for fintechs, and expand fintech access to markets. This translates to greater choice for poor people and the opportunity to leverage their transactions to enable access to credit and insurance.

Customer and data protection measures also complement the other enablers discussed, but adequate coverage may be lacking in many markets. Regulations commonly focus on fraud (for consumer protection) and rely on consent (for data protection). As a result, largely they are still playing catch-up to emerging innovations and new threats.

under consideration and consult local technical experts before launching new programs (Nègre and Cook 2019).[8]

Acting as a facilitator between relevant stakeholders. Fintechs often struggle to influence regulators in their market. Donors and DFIs can use their influence to convene and connect regulators and fintechs or fintech associations. They can also create opportunities for policymakers, financial institutions, academics, and market researchers to come together to understand and solve common problems. Other opportunities to match up and network (e.g., collaboration between entrepreneurs and local investors) may be useful. However, as donors and DFIs participate in creating an enabling environment for fintech, they need to be aware of possible conflicts of interest. Their involvement in market-level work should not be perceived as benefiting their investments (Coetzee 2019).

Building local capital markets. Donors and DFIs are temporary players, and they must crowd in local investors—especially as companies grow and mature. A strong investor ecosystem is especially important in nurturing early fintech companies and offering them the necessary support to grow. Incubators and accelerators provide a conducive environment for fintechs not only to raise capital but to learn the important business and technical skills necessary to engage with investors.

Promoting diverse entrepreneurship. While startup innovation may solve the stickiest challenges, the opportunity to be an entrepreneur often is a privilege only accessible to the most networked and elite members of society. Evidence shows that globally, women entrepreneurs struggle to raise capital for startups (Mei Topp 2020; Jackson 2020). In some interviews conducted by CGAP, local entrepreneurs in Nigeria said it was harder for them to raise capital than for the European and American founders operating in their markets; this is a growing view in markets like Kenya as well (Pilling 2019). **Development funders cannot easily change barriers to entry in a market, especially since they are not local actors. However, they can support creation of local incubators and accelerators that, in turn, support entrepreneurs from excluded groups.** Support for local networking events and training opportunities can help local entrepreneurs connect, grow, and pitch to global investors.

Sharing lessons learned and driving deeper impact

It may be premature to definitively understand the impact fintechs have on poor people. There is some evidence that digital payments and digital credit reduce inequality or promote other welfare effects, but that evidence is largely focused in developed markets (da Silva et al. 2019; Philippon 2019; and Sahay and Cihak 2020).

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8   Organizations like the United Nations Capital Development Fund (UNCDF) have provided government guidance on fintech/digital financial services policy. CGAP's work on interoperability has also produced guidance for funders. The CGAP blog series, Interoperability and Digital Financial Services, is a helpful resource: https://www.cgap.org/blog/series/interoperability-and-digital-financial-services

Universal metrics and standards are missing in the public domain. Learning is an important function for the market, and development funders can advance development by proactively extracting and sharing lessons learned about successes and failures. The following set of activities and supports are important. This is an area where donors and public development funders must be active; increasingly, impact investors are also playing a role.

a. **Sharing lessons learned.** Even before discussing quantifiable impact, the financial inclusion community must build fluency and comfort around fintech business models. Development funders with a track record for supporting fintech must discuss lessons learned from both successes and failures. For instance, a 2018 paper by Flourish documents innovations and lessons learned on digital MSME credit companies in India (Omidyar Network 2018). Another example is Accion's paper on the value of a "tech and touch balance" in fintech models that focus on impact, directly based on lessons learned from its portfolio companies (Stout and Parbhoo 2018). Reports like these hold great value in our field, especially those based on lessons directly learned by development funders within their portfolios.

b. **Sharing impact criteria.** As development funders invest in specific business models, from assessment to conclusion of funding, they formulate their own understanding of the impact that is possible. But very little is publicly shared, and the impact potential of a fintech that the development funder shares in a press release is rarely followed up on with impact results. As a result, **the impact of fintech on financial inclusion is often confused with its scale in certain markets—an inadequate proxy.** While we understand that some learnings on returns must be kept confidential, it is important, especially for public development funders, to share learnings on crucial impact evidence that emerged across models. Quantifiable, rigorous impact studies on fintech are still rare. Except for mobile money in East Africa, we know very little about fintech's impact beyond basic numbers on access and use, and most of the time, that, too, is missing. The lack of data and insight on fintech's effects is a feature in all new sectors. In some cases, not only is the data on impact missing but the very impact itself, and it is too early to assess. The industry could benefit from the impact stories currently available on some mature models.

c. **Standardizing metrics.** The heterogeneity of business models complicates efforts to create global metrics and standards for fintechs. CGAP has found this most visible in the PAYGo PERFORM initiative, an effort to standardize metrics for PAYGo asset finance business models .[9] National and regional fintech associations also play an important role in standardization but development funders bring influence that helps globally embed metrics across the sector and ensure its use in reporting. Notably, supported by a set of development funders, organizations like MIX are helping to build data standards around fintech and its impact on financial inclusion.[10] Other efforts to standardize metrics for fintech business models are in the works, particularly for

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9   For more information on the PAYGo PERFORM initiative, see: https://www.findevgateway.org/organization/paygo-perform
10 For more information on the Inclusive Fintech 50 initiative, see: https://www.inclusivefintech50.com/

early-stage fintechs.[11] Data that are robust enough to assess financial and social performance can also crowd in private capital. Development funders such as the IFC and several foundations have funded innovation prizes that assess and showcase early-stage companies focusing on inclusion, with the aim of lending visibility and credibility where deserved.[12] While prizes encourage greater dissemination of information in the field, the assessment process must be of high quality. Grants and prizes must be funded at appropriate levels in order to avoid market distortions or prevent overhyped and underperforming actors from gaining prominence.

Development funders must also support the collection of good data on fintech funding flows that makes it easy to identify gaps, develop pipelines, seek coordination opportunities, and analyze concentrations and opportunities in the sector. Better data on funding flows would improve the allocation of resources to fintechs by region, product type, and stage of maturity.

Not every development funder can participate across a wide set of fintech funding needs as described above. Some development funders are specifically designed for one type of investment, such as early-stage impact investing. Others have a regional limit or rules that disallow engagement with policymakers. Our recommendation is that the larger the development funder (e.g., DFIs, foundations), the more diversified they work to be in their engagement with fintechs. This thinking is becoming more entrenched with development funders such as IFC, Flourish, FMO, and Accion, as they all fund research, acceleration, and discussion forums to advance market understanding of fintech and its impact. We hope more development funders will engage in such a diversified way.

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11 One such effort, Findexable, can be found at: https://findexable.com/wp-content/uploads/2019/12/Findexable_Global-Fintech-Rankings-2020exSFA.pdf

12 Examples of fintech prizes funded by the IFC and other development funders include the Inclusive Fintech 50: https://www.inclusivefintech50.com/ and the F3 Prize: https://dfslab.net/f3prize/

CONCLUSION

THERE IS A COLLECTIVE NEED FOR A SUSTAINABLE, LONGITUDINAL way to deepen the effects of fintechs beyond the geographies where early successes have occurred. This goal requires more market engagement and additional collaboration among development funders than what has been possible to date. Fintechs represent a complex set of models that require deeper work and specialized funding in order to scale and produce impact at the market level.

The research behind this paper shows that impact could be more effective if development funders embrace a longer-term vision, a deeper commitment, and more risk-taking—and do so in ways that are collaborative, sequential, and play to their relative strengths and weaknesses.

The heterogeneity of models necessitates a careful assessment of impact, not only of financial returns but across different stages of growth. Criteria must be defined and measured at the earliest stages and evolve as firms grow.

Diversity and flexibility in funding mechanisms is key to support for new actors with unconventional models. Without innovation, our collective progress on the stickiest financial inclusion challenges will be inhibited. Development funders must not only fund startups to fill immediate gaps but proactively support the development of local capital markets. An effective strategy for funding fintechs necessitates greater coordination of efforts with other development funders to reinforce collective impact.

The volatility of the fintech market is to be expected, and to some extent much of the successful innovation so far has emerged from prior failures. In supporting new and risky ventures, development funders must ensure that vulnerable, low-income populations are protected, not least by ensuring that safeguards are built into their investments but by promoting responsible investing standards and responsible regulation in the markets in which they operate.

Without the right ecosystem fintechs cannot sustainably grow, and they may not be able to penetrate underserved lower-income segments. Development funders, especially donors and DFIs, must direct some of their support for fintechs to creating a regulatory and infrastructural environment and capital ecosystem that allows for growth and impact.

Finally, without insight and evidence, our understanding of the impact of fintech will remain hypothetical. Development funders must come together to invest in collection and dissemination of evidence and develop common standards for fintech's effects on financial inclusion.

FINTECH AND FINANCIAL INCLUSION: AN INNOVATION MAP

THIS APPENDIX DESCRIBES THE MAJOR DEVELOPMENTS UNDER the fintech umbrella that are relevant to advancing financial inclusion. It includes notable ways technology has been deployed in business models, processes, and services to either expand services to excluded individuals or solve existing market failures.

FIGURE A. **Two fintech business models**
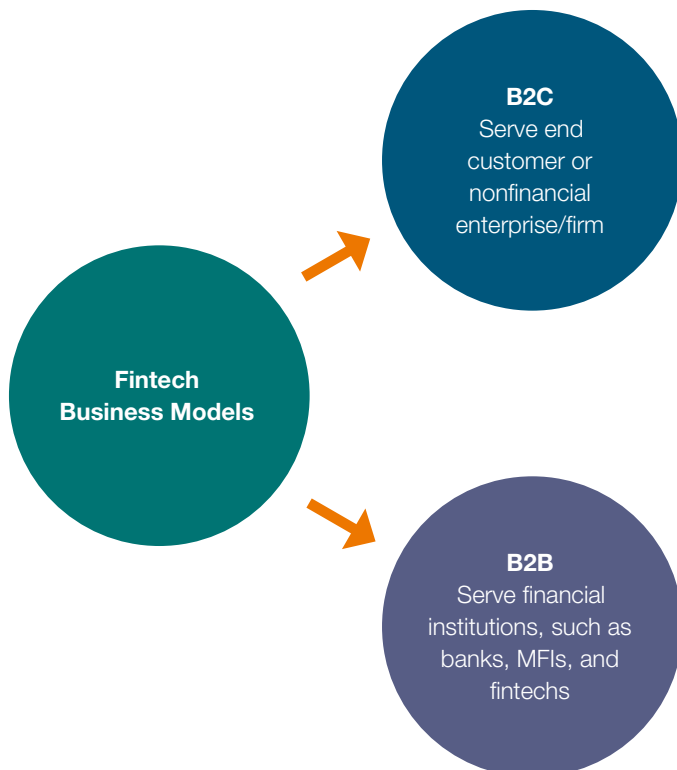
FINTECH SERVICES PLUG INTO ALL PARTS OF THE FINANCIAL SERVICES VALUE CHAIN

While global attention is focused on fintech services that directly reach customers such as payment wallets or mobile-based consumer loans, technology is massively transforming financial services at the back end as well. B2C and B2B fintechs that create innovations to aid banks and other financial institutions in transforming existing offerings may also indirectly expand financial inclusion.

B2C fintech directly serves the individual end customer or nonfinancial enterprises and firms. Services are created using new forms of analytics and distribution capabilities to reach unserved and excluded customers—sometimes less expensively. They also target underserved customers through better fit and experience.

FIGURE B. **B2C Fintech serving the end customer or enterprise**

Payments	Credit	Insurance	Savings and wealth management
• Customer services: Wallets and super apps, domestic and international remittances • Merchant services: POS machines, online payment gateways, bulk payment services	• Consumer lending • MSE lending • Asset finance • P2P credit	• Insurance aggregators and advisors • Microinsurance • Contextual insurance	• Micro-savings • Online SACCOs and ROSCAs • Robo-advisors • Money management and advisory apps

New value propositions
Digital banks: With a full banking license, digitally offer a suite of banking services with little or no physical presence.
Digital marketplaces: Offer a wider variety of financial services on one platform, allowing customers to choose and compare.

FIGURE C. **B2B fintech models serving financial institutions**

Financial institutions value chain	Origination	Intelligence	Risk management	Operations
Back-end fintech models	Includes marketing, distribution, and acquisition activities. • CDD for payment origination • CDD for credit origination	Includes all forms of data gathering and analysis to expand customer base or cross-sell opportunities. • Insurance telematics • Big data analytics for credit and insurance services	Includes all forms of customer and portfolio management and underwriting activities. • Alternative credit scoring • Regtech and compliance tools for financial institutions	Includes all forms of payments, claims processing, and repayments, plus other forms of servicing. • Payment APIs • Payment apps for banks/MFIs • Credit collection • Customer service support • Insurance process improvers — claims processing • Digital credit and savings stack

B2B fintech services aid financial institutions such as banks, microfinance institutions (MFIs), and fintechs, enabling them to better serve the end customer. B2B fintech services create business value for financial institutions by expanding their customer base, reducing risk, or enhancing operations and customer experience. Innovation is not always siloed in a single vertical. Overlap may exist and effects can range widely from origination to customer service. B2B fintech services impact a financial institution's business gains, making the impact on financial inclusion is indirect and hard to measure.

FIGURE D. **Payments services**

B2C (for individuals and merchants)	**B2B (for financial institutions)**

Customer

Merchants/retailers/SMEs

Digital payments

International remittance services	**Merchant payment POS machines and card readers**
Wallets and super-apps	**Online payment gateways**
	Bulk payments for businesses (suppliers, employees)

APIs for MFIs, small fintechs
Payments apps within banking websites
Apps for CDD and onboarding

Key business models explained

What is the nature of B2B and B2C fintech innovation across payments, credit, savings, and insurance? Which key technological components are essential for these products to work in their markets?

Payments

Fintech has significantly transformed payments services, particularly in reducing costs of remittances and transactions for customers. It has also eased merchant acquisition costs. The revolution sparked by M-PESA is the most recognized and established payment innovation in the digital financial inclusion space. Broadly, fintech payments have been enabled by (i) increased penetration of smartphones among customers and POS devices among merchants, enabling QR codes and data tracking, respectively, (ii) the availability of back-end technologies such as cloud and APIs to help connect fintech payments services to banks, and (iii) public financial infrastructure such as IDs, payment switches, and interfaces—all key to ensuring widespread penetration to the base of the pyramid.

INNOVATIVE BUSINESS MODELS
Payments super apps, wallets, and remittance services offer low-cost pricing, easy-to-use interfaces, and access to a variety of services. Payments companies focus on scale and acquiring a large customer base, which allows them to monetize the data that result from

transactions. In many markets in Asia, payments companies (especially payment wallets) rely on large equity investments from shareholders to reduce or eliminate customer fees. They often provide cashbacks on transactions to drive scale. An open question exists on whether these types of services can be commercially sustainable. So far, the answer has been difficult to assess during the growth stage.

Services aimed at merchants generally are fee-based per transaction, although revenue from providing credit to these merchants is becoming more important to some providers. This topic is further discussed in the section on credit below.

Payments services such as payments gateways connect financial institutions and MSMEs through digital technologies like APIs. Their purpose is to create new value for existing customers or expand the customer base, and to help ease enrollments and transactions. These payments services, too, charge transaction fees—either to the financial institution or the end customer.

IMPACT

Research conducted by Suri (2017) demonstrated that mobile money could have an impact on poverty reduction. Recent research released by the IMF (Patnam and Yao 2020) and BIS (da Silva et al. 2019) states that digital payments services help reduce inequality and help MSEs more effectively weather shocks.

Credit

Digital credit in emerging markets first scaled as a simple model for consumer credit in East Africa. It since has expanded to many segments and loan types, as well as a category of back-end services for traditional lenders.

Digital credit targets those underserved by existing credit services, so technology is mainly used to expand risk assessment and eligibility (Chen and Mazer 2016). Advanced data analytics and machine learning, which help analyze a customer's digital behavior or a firm's transactions and activities, are therefore significant to the business model. Basic cloud platforms and APIs are necessary to link with underwriting banks or lending institutions. App-based lenders reach customers directly, analyze their phone data in order to lend to them, and service loans and repayments through the app interface (Fernandez Vidal and Hwang 2017).

INNOVATIVE BUSINESS MODELS

B2C services. B2C services lend directly to the customer. The main revenue here is the interest fee they are charged. The cost of operations substantially changes depending on loan type and segment type.

Digital credit providers lend against behavioral data gleaned from electronic data usage rather than against collateral or security. They may observe a customer's payment transactions or analyze electronic invoices to make lending decisions.

FIGURE E. **Digital credit services: Fintech credit**

	Consumer lending	MSME lending	Asset finance (for all MSMEs, consumers or farmers, includes PayGO)	Smallholder credit
B2C	Often small loans without explicit purpose. But some variations in Asia, US are for education loans, etc.	Cashflow lending (collateral and non-collateral versions exist) Supply chain financing		
B2B	Alt. data CDD	Credit-technology stack	Credit scoring	Collections-as-a-service

Another significant point of distinction is whether a fintech lends off its own balance sheet or someone else's. Balance sheet lenders tend to be larger and well established. Few companies have been able to reach the scale and credibility needed to attract debt capital for direct lending. Examples include Aye Finance in India and Branch, a company that operates in several markets across Africa. Non-balance- sheet lending is newer. It is an interim solution for fintechs that have yet to scale and instead lend on behalf of others. Peer-to-peer (P2P) credit and crowdfunding are examples.

B2B lending services offer credit acquiring, credit scoring, loan processing, and collection services to established lenders and financial instutions. Revenue for the fintech is per client/per loan serviced by the financial institution. Its revenue is baked into the interest charged to the end borrower. Regardless, it is crucial for these firms to prove validity and effectiveness in their early stages. If fintechs fail to secure debt capital after the initial growth stage, they sometimes transform from direct lenders into vendor/partners for financial institutions that offer their technology stack as a service.

IMPACT

It is unclear whether digital credit products solve for larger credit gaps in the market or lead to welfare effects at an aggregate level. Evidence from analyzing new digital credit scoring models in the United States showed inequity and bias for socio-cultural segments such as minorities and women-owned businesses (da Silva et al. 2019). Similar effects in EMDEs are unknown.

Insurance and savings

Fintechs that offer insurance and savings tend to be newer. Their business models are unlikely to be mature and therefore lack evidence of impact. The following two sections on insurance and savings focus on business models only, as impact data from EMDEs is largely lacking.

INSURETCH

Most fintechs do not begin as insurance underwriters since insurance licenses generally carry large capital requirements. Innovation in this area, also known as "insuretech," has focused on rewiring how insurance is packaged and sold. Innovations in marketing, delivery, and customer experience make a product appear more flexible, customized, and simplified.

The technology is deployed in three key ways: (i) data analytics to reduce the cost of assessment and claims, (ii) digital apps and platforms that act as distribution channels, and (iii) internet-enabled sensors and predictive risk modeling that result in prevention of events and better claims management for both businesses and customers.

Innovative business models

Insuretech modularizes key aspects of insurance to make the core product more accessible. The business model is fee- or commission-based, per customer or per transaction. Most insuretech companies are brokers or agents. At the back end, their products are underwritten by large licensed insurance companies.

Insuretech innovations that specifically target poor people have just begun to emerge. Good ideas do exist for reaching underserved individuals and low-income customers through better fit and experience, but without patient capital many innovative ideas soon die. Attracting investment at the Series A level or higher is difficult, and learnings from EMDE models at the industry level are limited.

As more and more newly digital customers emerge in a market, insuretech companies may use the data they generate to enhance pricing or automate claims. Toffee, an Indian micro-insurer of bicycles and other products often relevant to poor people, is developing a fully digital claims experience that allows customers to submit and track claims through smartphone apps. In all markets, however, data-based pricing and claims processing can cause unintended negative consequences such as discrimination based on race, gender, and/or occupation. Regulation is needed to protect customers. For now, because insuretech is new in most emerging markets, regulators are still playing catch-up to the rapid technological developments in the sector.

SAVINGS AND WEALTH MANAGEMENT

Fintechs often partner with banks to offer traditional savings products since regulation prevents them from directly offering such services. Digital banks are an exception. These players have full banking licenses and digitally offer a

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The Rise of P2P Lending

P2P lending is a fast-growing non-balance sheet lending model, especially in China and less pervasively in Indonesia and India. PP2P fintechs connect lender funds with borrowers; and offer the lenders higher than average earnings. They take on part of non-repayment risk to build trust in the system. Largely borrowers are small-businesses or daily traders with cash-flow needs.

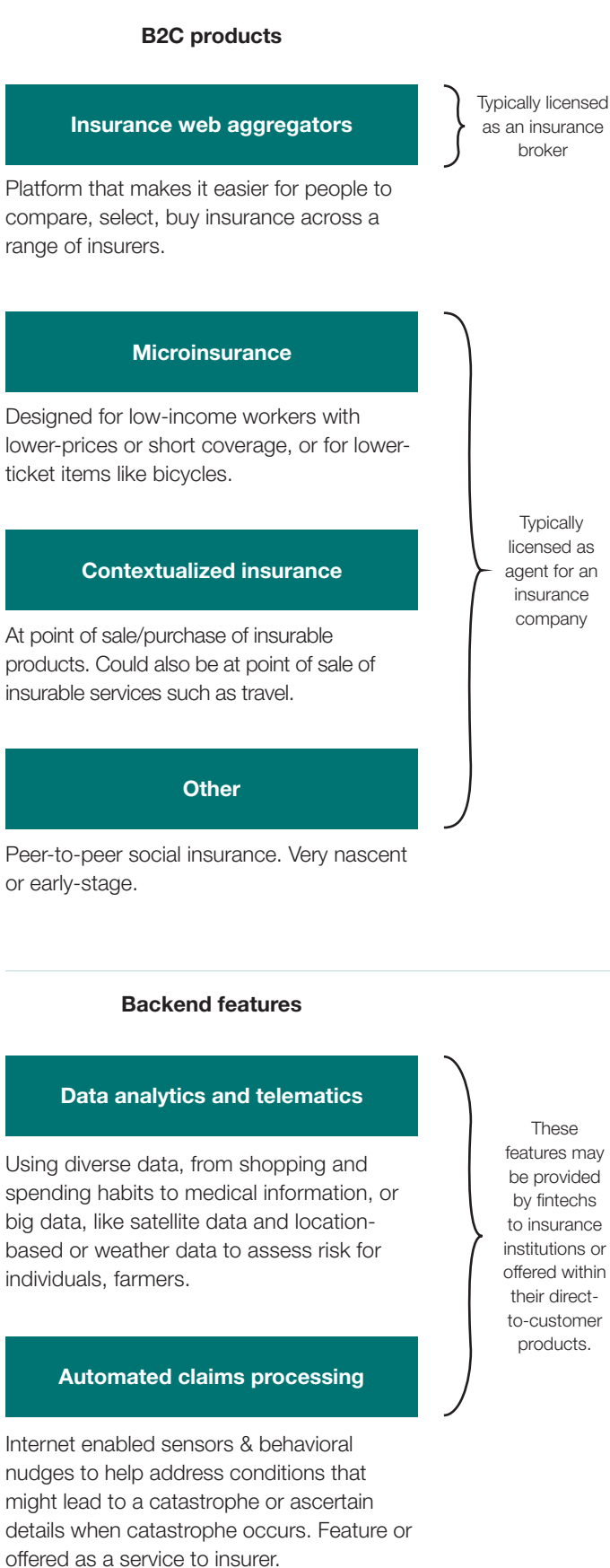**Advantage:** Reduces risk to lend; connects unused funds with lenders.

Disadvantage: Without credit bureaus, systemic risk rises.

Other variations of P2P financing such as crowdfunding exist in some markets. Prominent examples of P2P model include Investree in Indonesia and Faircent in India.

FIGURE F. Insuretech models active today

B2C products

Insurance web aggregators

} Typically licensed as an insurance broker

Platform that makes it easier for people to compare, select, buy insurance across a range of insurers.

Microinsurance

Designed for low-income workers with lower-prices or short coverage, or for lower-ticket items like bicycles.

Contextualized insurance

At point of sale/purchase of insurable products. Could also be at point of sale of insurable services such as travel.

Other

Peer-to-peer social insurance. Very nascent or early-stage.

Typically licensed as agent for an insurance company

Backend features

Data analytics and telematics

Using diverse data, from shopping and spending habits to medical information, or big data, like satellite data and location-based or weather data to assess risk for individuals, farmers.

Automated claims processing

Internet enabled sensors & behavioral nudges to help address conditions that might lead to a catastrophe or ascertain details when catastrophe occurs. Feature or offered as a service to insurer.

These features may be provided by fintechs to insurance institutions or offered within their direct-to-customer products.

suite of banking services with little or no physical presence. Digital banks have begun to appear in many EMDE markets although it is not yet clear whether they serve excluded customers (Jenik and Zetterli 2020).
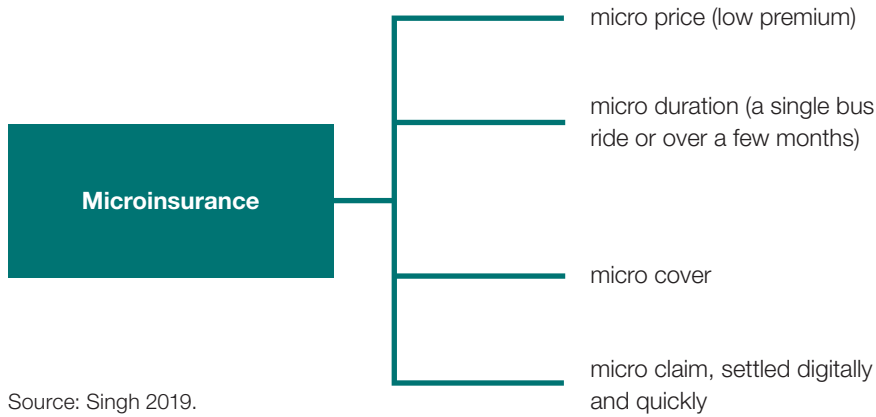
Another worldwide trend in savings and wealth management is "robo-advisors" that provide digital financial advice based on algorithms. Once again, the products they offer are aimed at underserved and young, middle-class individuals rather than excluded groups.

Innovative business models

At the moment, most savings services are targeted toward the digitally savvy. Smartphones are key to the many fintech saving products that engage millennials through their enticing interfaces. They employ techniques that track a customer's specific goals and behaviors, then nudge them toward intended savings and investment behaviors. Examples include Easy Plan, a flexible savings platform in India that sends daily reminders to encourage savings. On the other hand, the money management app Walnut attempts to positively influence a customer's financial behavior by providing a detailed overview of their expenses.

Digitized savings services aimed at excluded groups tend to be early stage. Savings business models take time to offer returns, especially if they are not packaged in combination with other services. While a brick-and-mortar presence can build trust and may encourage low-income people to save with a new service, the need for a physical space could make the business model unprofitable in the early stage. Investments, therefore, may be hard to secure for services that purely target low-income segments. A few

FIGURE G. **Features of microinsurance products offered by insuretech companies**

- micro price (low premium)
- micro duration (a single bus ride or over a few months)
- micro cover
- micro claim, settled digitally and quickly

Microinsurance

Source: Singh 2019.

exceptional fintechs have brought savings and wealth creation to poor people through models that balance technology with physical access and partnership-based models. A notable example is Kaleidofin, a micro-savings app that uses local partnerships with NGOs to reach its customers. Overall, in the coming years more patient capital and space for experimentation will be necessary to develop these innovations.

Key business models are summarized in Table H below, although most are not yet well established or sustainable. Their impact on financial inclusion or the market is largely unknown.

FIGURE H. **Digital savings services**

Microsavings	Online Saccos and ROSCAs	Digital Stack for savings	Others
Digital payments allow for simgle, instant contributions.	Allows groups to form online SACCOs. Payment transactions can be recorded and analyzed for offering other value-added services such as insurance, etc. So far very early stage.	White label exosystems of API's for banks and financial institutions that help their customers save more and spend better. Specific features such as nudges, goals can be added in.	Retail savings: Customers purchase coupons at retail outlets that then allow them to access returns in the form of cash, food or health insurance access.
Goal setting and goal monitoring: Apps help visualize current goals and progress.			
SMS or video nudges to help customers stick to goals. Simple, easily displayed information allow customers to keep track of their progress.			Money management apps, including spending and budgeting.

FINTECHS AND UNDERSERVED SEGMENTS

MANY DEVELOPMENT FUNDERS FOCUS ON SPECIFIC EXCLUDED segments in their fintech, such as smallholder farmers, MSEs, and women. Fintechs can reach these segments through targeted products or via scale. This Appendix summarizes the major fintech innovations that exist for these segments today.

Rural and agricultural livelihoods (smallholder farmers)

THE PAIN POINT

Smallholder farmers make up an excluded customer segment that is considered risky and costly to serve. Their livelihoods and value chains are not fully digitized, and they live and work in remote areas with poor physical and financial infrastructure.

THE INNOVATION

Fintech innovation focuses on more efficiently assessing the risk in serving smallholder farmers and reducing cost to serve. Agri-focused fintechs:

- Leverage technology and employ techniques (e.g., machine learning, satellite imagery) to analyze farming practices and ultimately determine creditworthiness.

- Partner with actors in the smallholder value chain (e.g., agricultural retailers) to reduce the cost of serving farmers. These actors mitigate the risk that a farmer would use a loan for purposes other than agriculture by directly offering them credit for seed, fertilizer, animal feed, or other agricultural inputs.

- Bundle other services together with credit (e.g., agricultural education and advice, insurance, access to markets).

THE CHALLENGE

New forms of underwriting such as satellite data and value chain analysis require patient capital to test and finalize. A balance of tech and touch is key to serving this segment, yet a pro-poor approach can be expensive, making unit economics difficult from the start and some assisted scaling necessary. Agriculture is complex, and many investors find it difficult to understand how to get involved and receive rewarding returns on investments.

EXAMPLE

Crowde is an Indonesian peer-to-peer (P2P) lending platform that enables farmers to raise working capital through a crowdfunding platform with a profit-sharing scheme. To assess creditworthiness, Crowde calculates a farmer's credit score based on the types of crops they plant and the strength of their community connections. GPS tracking also plays into the credit score. The P2P lending firm partners with farm supply stores to deliver loans in the form of fertilizer, seed, and animal feed; it does not lend cash. Crowde ultimately connects farmers with buyers for their crops. The cycle establishes a new infrastructure for the farming industry, providing a strong link between farmers, suppliers, and buyers.

Micro and small enterprises

THE PAIN POINT

MSE sale and profit margins are highly vulnerable to factors like seasonality, input and labor costs, late payments, and unexpected expenses that can result in uneven cash flows. Without collateral or a credit history, banks are reluctant to lend to MSEs.

THE INNOVATION

Fintech lending business models deploy AI, machine learning, and data analytics to offer customized working capital loans to MSEs. The models assess transactional data (e.g., MSE cashflows, electronic invoices) from POS devices or bank statements to assess loan applicants. Some models are even able to establish creditworthiness, evaluate risk, and issue loans within 24 hours. Access to real-time information helps fintech lenders manage risk.

THE GAP

Fintech lenders need patient capital that allows them to test and ensure the models they use to assess creditworthiness and risk are reliable—especially those used in remote areas and those that focus on excluded customer segments. Regulation in some markets requires fintech lenders to hold multiple licenses, resulting in increased administrative costs. The availability of reliable, real-time data such as electronic transactions or invoices can limit the size of MSEs that can be served.

EXAMPLE

Indifi, an MSE fintech lender in India, facilitates tailor-made, collateral-free small business loans. First, the MSE provides its basic business and KYC details. Indifi then uses its advanced algorithms on payment and other business data to draw insights and judge the creditworthiness of the business. Loans are delivered directly through payment gateways according to the customer's needs and at customized intervals.

Women

THE PAIN POINT

The stringent requirements of traditional institutions often make it difficult for women to access financial services. They may lack ID or lack property rights for collateral. Financial products and services often are not designed or delivered in a way that encourages adoption among women. In addition, disparities in mobile phone ownership and literacy levels exacerbate women's financial exclusion.

THE INNOVATION

Fintech business models are using technology that allows women to bypass inflexible requirements and directly interact with financial services.

- Fintech lending business models use digital footprints and alternate credit scoring to improve women's creditworthiness or decrease the risk of serving them. Fintech companies are capturing digital footprints of savings groups and assessing women's social media or business data in order to provide women with credit.

- Fintech business models are beginning to deploy technology to design and ensure a positive customer experience for women. Some focus innovation on women's customer experience by creating apps while others design financial products based on women's goals.

THE GENDER GAP

Even with these innovations, fintech is not a perfect solution to resolve the financial inclusion gender gap. Counting on business as usual to reach women may not work; a focus on solving for deeper social- norms-based issues in product design and delivery is required.

EXAMPLE

Amartha, a P2P fintech lending platform in Indonesia, offers rural women microentrepreneurs access to working capital. The fintech recognized that women in rural Indonesia lack enough capital to support their enterprises and traditional lenders have unrealistic collateral requirements to serve this customer segment. Amartha utilizes a psychometric credit scoring model to assess a borrower's creditworthiness and risk. In addition to its digital platform, the fintech extends a human touch by employing field officers to educate women and disburse loans.

APPENDIX C
METHODOLOGY

CGAP BEGAN THIS RESEARCH BY HOLDING DETAILED conversations with global development funders about fintechs and their engagement with them. We spoke to staff from foundations, DFIs, and development agencies, as well as industry experts and researchers. We followed up with a 2019 assessment of fintechs in four countries: India, Indonesia, Mexico, and Nigeria. Across these four markets, we interviewed 60 fintechs at all stages of growth. We also spoke to local development funders (both early and mature stage investors, where possible) and other stakeholders (e.g., incubators, accelerators, fintech associations, industry bodies).

CGAP also previously completed extensive research and engagement on funding approaches. We found to be most prominent the market systems approach to financial inclusion that advocates for development funders to (i) expand their risk appetite for testing new business models, (ii) broaden their lens beyond direct funding of providers, and (iii) leverage their technical credibility to facilitate market development.[13] This paper is an addendum to that body of work, adding specific insights on engagement with a new set of actors.

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13   See the Gateway course-Learning course "A Systemic Approach to Financial Inclusion" at: https://olc.worldbank.org/content/systemic-approach-financial-inclusion-self-paced

LIST OF COUNTRY INTERVIEWEES

Fintechs

INDIA

Firm	Model
Active.Ai	B2B back office
Aye Finance	Credit
CreditVidya	Credit
EasyPlan	Savings
Eko	Payments
Faircent	Credit
FPLabs	Credit
ftcash	Credit
i2iFunding	Credit
Indify	Credit
Instamojo	Credit
MobiKwik	Payments
OhMyLoans	Credit
Policybazaar	Insurance
SmartCoin	Credit
SMEcorner	Credit
Toffee Insurance	Insurance
Upwardly	Savings and investments
Walnut	Savings/advice
ZestMoney	Credit

INDONESIA

Firm	Model
Akulaku/TaniFund	Credit
Amartha	Credit
Crowde	Credit
Danacita	Credit
GoPay/Mapan	Payments
Investree	Credit
KoinWorks	Credit
Mekar	Credit
OVO	Payments

MEXICO

Firm	Model
Bitso	Payments
BRIC	Credit
Comunidad4Uno	Marketplace/platform
Conekta	Payments
Credijusto	Credit
Credilikeme	Credit
Destacame	Marketplace/platform
Kobra	Marketplace/platform
Konfio	Credit
Kubo Financiero	Credit
Mercado Pago y Mercado Libre	E-commerce platform
Qiubo	Payments
Übank	Savings/digital bank

NIGERIA

Firm	Model
Afara	Credit
Bankly	Savings
Branch	Credit
Casava Insurance	Insurance
Lidya	Credit
Netplusadvisory/ NetPlusDotCom	Payments
Pagatech	Payments
PiggyVest	Savings
Social Lender	Credit

Development funders and other stakeholders

Firm	Country	Type
AFICO	Mexico	Crowdfunding association
AMAFORE	Mexico	Association of private pension funds
ASBA	Mexico	
Banxico-CoDi	Mexico	Regulator
BBVA	Mexico	Bank
CNBV-Fintech	Mexico	
Fiinlab	Mexico	
Fintech Hub	Mexico	Fintech association
Fintech México	Mexico	Fintech association
IST Soluciones	Mexico	Expert
OXXO	Mexico	Banking correspondent
Santander	Mexico	FI
Telecomm	Mexico	Banking correspondent
Yastás	Mexico	Banking correspondent

Firm	Country	Type
Airtel Payments Bank	India	Payments bank/telco/ marketplace
Asha Impact	India	Investor
Bharat Inclusion Fund	India	Investor
Kalaari Capital	India	Investor
MEDICI Research	India	Research
Omidyar	India	Investor
Prime Venture	India	Investor
AFTECH Indonesia	Indonesia	Association
Kejora	Indonesia	Investor
Pulse Lab	Indonesia	Market facilitator
AXA Mansard	Nigeria	Investor/FI
EFInA	Nigeria	Market facilitator
E-Payment Providers Association	Nigeria	Market facilitator
Google Startup Accelerator	Nigeria	Accelerator

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