

Practice papers

FinTech and financial inclusion: Opportunities and challenges

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ABSTRACT

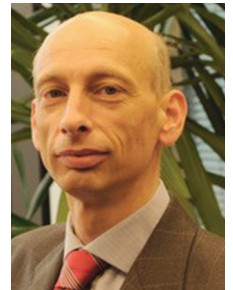
Financial inclusion, in essence, is about promoting broader access to and usage of financial services, in particular payment services. At the heart of payment services are transaction accounts. This paper will describe the crucial role played by transaction accounts and how stakeholders can promote access and use of these accounts. It will also look at recent FinTech developments and highlight the role innovations can play in broadening access to financial services while addressing the related risks. The discussion will be based on two reports on payment aspects of financial inclusion released by the Committee on Payments and Market Infrastructures and the World Bank. The framework developed to promote access and use of transaction accounts in the first report underpins the second report, which assesses the potential of FinTech developments for financial inclusion.

Keywords: *financial inclusion, FinTech, transaction account, payment services, innovation*

INTRODUCTION

Over the last decade or so, financial inclusion has become an important topic, with many national authorities engaged in promoting financial inclusion in their countries. International organisations have also become involved, mostly by developing and providing expertise and guidance. Most of this assistance, however, has focused on general aspects of financial inclusion, such as the positive role it can play in a country's economic development. In other cases, the focus is on topics of a technical nature, for example the contribution that mobile payments can make to including a larger share of the population in the financial system. Missing from the discussion, however, is a holistic approach, where the payment aspects of financial inclusion are addressed in a broader context. Understanding how the world of payments and payment systems works is essential to deal effectively with the complexities involved in opening up financial services for a much larger group of people.

Recognising the contribution that could be made by providing an analysis of the payment aspects of financial inclusion, the Committee on Payments and Market Infrastructures (CPMI) and the World Bank joined forces to create a task force to analyse the role of payments and payment services and provide guidance to countries seeking to promote financial inclusion in their markets through payments. The task force released its findings in April 2016 in



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the report ‘Payment Aspects of Financial Inclusion’ (PAFI).¹ Since then, the pace of technological innovation (or FinTech) has increased substantially, and many innovations have made major contributions in improving financial services, in particular with respect to making and receiving payments. For this reason, the CPMI and the World Bank decided to revisit the framework described in the PAFI report and to investigate the implications of FinTech on the provision, access and use of transactions accounts. The analysis was published in April 2020 in the report ‘Payment Aspects of Financial Inclusion in the FinTech Era’.²

The present paper will provide an overview of both reports: it will first discuss the essential role played by transaction accounts and will then briefly present the framework of the 2016 report, including the guidance provided at that time. It will then focus on FinTech developments and will review the main elements and conclusions of the 2020 report, with special attention to the additional guidance issued in relation to FinTech.

THE PAFI FRAMEWORK

This section will give a brief overview of the PAFI framework, as set out in the 2016 report. The focus will be on transaction accounts as the cornerstone for providing electronic payment services, the objectives for financial inclusion from a payments perspective, the analytical framework developed to achieve these objectives, and guidance on improving access to and usage of transaction accounts.

Transaction accounts

There are many ways to define financial inclusion. The report does not seek to identify the best definition; rather, it uses a practical approach, defining financial inclusion as having access to and using the

type of financial service(s) that meets the needs of the user. Important here is not just the fact of having access to financial services, but also whether or not a user actually uses the service. The frequency with which services are used will reflect how useful and valuable a service is to a user. It is one thing for someone to have access to financial services, but if they make little or no use of these services, then it is hard to say, at least from a practical point of view, that this person is truly financially included.

Everyone needs to make and receive payments in their daily life. Financially excluded people have only one instrument at their disposal: cash — ie banknotes and coins. Although convenient for small, face-to-face transactions, cash is not well suited for other types of transactions, such as remote payments, whereby payer and payee are not in the same location. Safety — that is, the risk of keeping and carrying cash — is also an important concern. This is one of the reasons that paper-based payment instruments were originally introduced as an alternative to cash. More recently, electronic payment instruments have evolved as the preferred non-cash instrument: they offer higher speed, better safety and more convenience. For these reasons, giving everyone access to electronic payment services represents an important step forward. For this to happen, access to a transaction account is essential. Indeed, such accounts are the basis for providing electronic payment services. Furthermore, they offer another crucial advantage: the ability to store money safely.

In the PAFI report, the definition of transaction accounts includes two main types: ‘deposit transaction accounts’ or deposit accounts held with banks and other authorised deposit-taking financial institutions that can be used for making and receiving payments; and ‘e-money accounts’ or prepaid instruments based on e-money

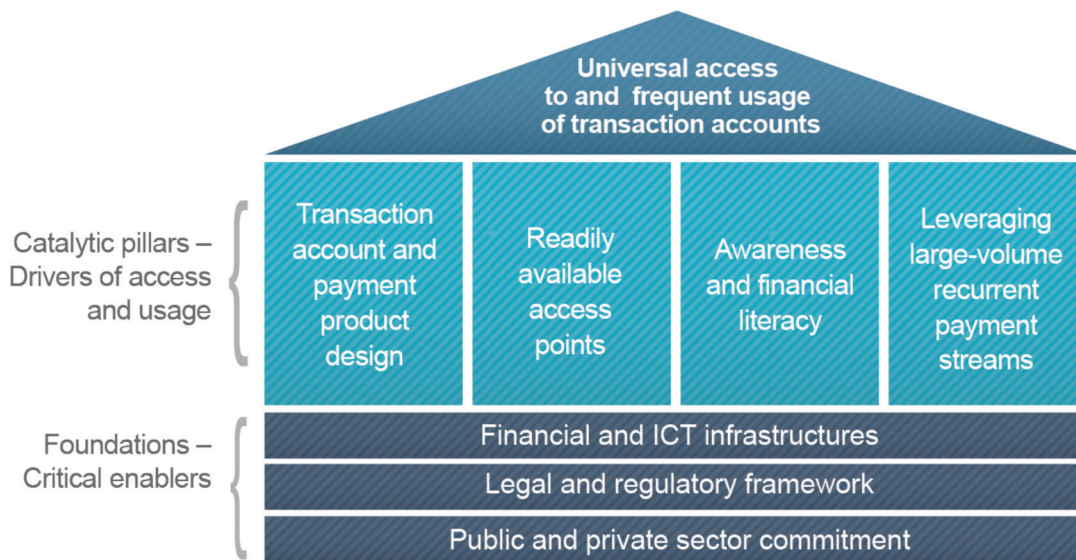


Figure 1: Interrelation of foundations, catalytic pillars and effective usage: The 'PAFI house'

Source: Committee on Payments and Market Infrastructures and World Bank (2016) 'Payment Aspects of Financial Inclusion', available at: <https://www.bis.org/cpmi/publ/d144.htm> (accessed 26th October, 2020).

offered by banks and other authorised deposit-taking financial institutions, as well as by authorised non-deposit-taking payment service providers (PSPs) such as mobile network operators. As payment products, both types of transaction account offer the same basic functionalities, ie to make and receive payments and to store value.

The objectives of PAFI

Seen from a payments perspective, the report sets out to achieve a number of objectives for financial inclusion, namely to provide access to and use of at least one transaction account that is operated by a regulated payment service provider. This should make it possible to perform most, if not all, payment needs; to safely store some value; and to serve as a gateway to other financial services. Such an account should be available to all individuals and to all small and micro-sized businesses, which are more likely than larger businesses to be financially excluded or lack access to certain basic financial services.

Enhancing access to and usage of transaction accounts

Having set out the tools — transaction accounts — and the objectives — access to accounts for all — the question then is: how to promote access to an account and, once people have an account, to make sure that they use it for their (daily) payment needs. The answers can be found in the FAFI framework, and is summarised in the 'PAFI house' (see Figure 1). Based on the evidence from financial inclusion efforts around the world, the framework is structured into foundations and catalytic pillars. The house has three foundations — commitment from stakeholders, the legal and regulatory framework, and financial and ICT infrastructures; and four pillars — payment product design, the ease with which accounts can be accessed, awareness and financial literacy, and leveraging large-volume recurrent payment streams for financial inclusion purposes.

The foundations are the critical enablers for payment systems and the provision of

payment services in general. More specifically, they are essential for access to and usage of transaction accounts. Based on these foundations, the catalytic pillars are the drivers for access and usage.

The analysis of these elements is structured into foundations and catalytic pillars. Based on these, Figure 1 illustrates the interrelation of the foundations, the catalytic pillars and the end objective of achieving universal access to and frequent usage of transaction accounts (the roof of the house).

The guiding principles

The report sets out guiding principles to help countries advance financial inclusion and suggests possible key actions, including providing basic accounts at little or no cost, stepping up efforts to increase financial literacy, and leveraging large-volume payment programmes, such as government payments, by adopting electronic payment services.

The seven guiding principles are: (1) commitment from public and private sector organisations; (2) a robust legal and regulatory framework underpinning financial inclusion; (3) safe, efficient and widely reachable financial and ICT infrastructures; (4) transaction accounts and payment product offerings that effectively meet a broad range of transaction needs; (5) availability of a broad network of access points and interoperable access channels; (6) effective awareness and financial literacy efforts; and (7) the leveraging of large-volume and recurrent payment streams, including remittances, to advance financial inclusion objectives.

These principles, and in particular the key actions for consideration, are based on the analysis in the report and on the experiences of countries that are promoting financial inclusion. It is important to note, however, that key actions that are helpful in one country may not be equally helpful

in another, given that there are many economic, cultural and political differences between countries.

PAFI AND FINTECH

This section will discuss the payment aspects of financial inclusion in the FinTech era based on the analysis in the 2020 PAFI report. New applications of technology to financial services, often referred to as 'FinTech', have accelerated in recent years. These developments have implications for how transaction accounts are provided, accessed and used as they underpin new products and services and enable new access modes.

An overview of the FinTech developments with potential relevance for financial inclusion can be found in the 'PAFI FinTech wheel' (see Figure 2). The core of the wheel is the ultimate goal of financial inclusion, namely universal access to and frequent usage of transaction accounts for all, while the relevant FinTech developments are represented by two layers around the core: the inner layer represents the new technologies and the outer layer gives the new products and access modes. One could say that the inner layer provides the tools for the outer layer to provide new financial services.

This section will briefly discuss the new technologies, the new products and services, and the new access modes, and look at the potential ramifications for financial inclusion.

New technologies

Application programming interfaces

Application programming interfaces (APIs) prescribe the way software programs communicate and interface with each other. APIs exchange data directly, without the need for human input. This in itself is not new, but the fact that APIs are increasingly used for financial services, and specifically for payments, is a new development.

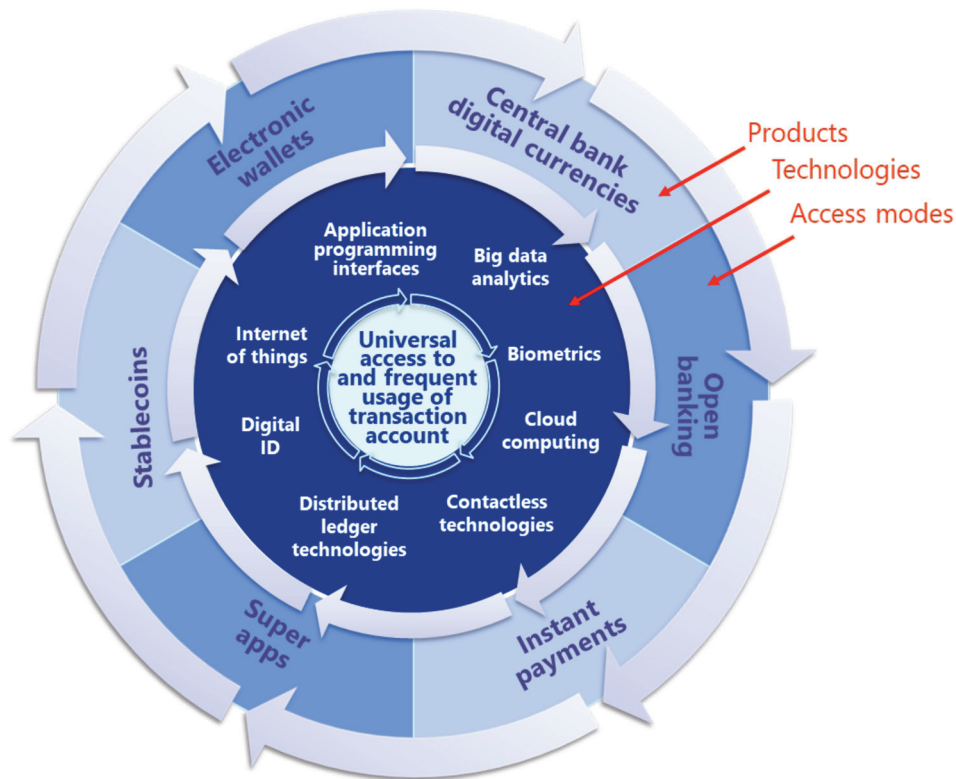


Figure 2: FinTech developments potentially relevant to the payment aspects of financial inclusion: The 'PAFI FinTech wheel'

Source: Committee on Payment and Market Infrastructures and World Bank (2020) 'Payment Aspects of Financial Inclusion in the FinTech era', available at: <https://www.bis.org/cpmi/publ/d191.htm> (accessed 26th October, 2020).

APIs are not themselves an instrument to advance financial inclusion, but they do allow PSPs to improve their payments services, making them faster, more secure, more intuitive and easier to use. This will increase the value of these services to the customers, and potentially attract new (unbanked) customers. Among the leaders in API adoption are a new generation of digital PSPs that have the technology embedded in their founding infrastructure.

Big Data analytics

'Big Data' is a widely used term that refers to the massive volume of data generated by digital tools and information systems. Big Data analytics can be described as technologies that enable the analysis of a large volume of data.

Big Data analytics has recently made inroads into payment and financial services. PSPs are gaining a better understanding of their customers through proactively collecting data by means of increased customer interaction and tracking customer behaviour on platforms such as mobile phones and social media. This can allow PSPs to better tailor products for different segments of the population.

Furthermore, Big Data analytics can help to onboard new customers through screening processes (eg by providing information required for know-your-customer purposes) or it can help to authenticate and authorise existing customers through the use of granular data (eg combining biometric features with behavioural

information). Moreover, it can be used to provide a personalised and conversational service — through the use of language processing — to customers in need of more elaborate assistance for accessing financial services.

Biometric technologies

Biometric technologies use physiological and behavioural attributes to establish and authenticate an individual's identity. Examples of physiological attributes are fingerprints and facial characteristics; examples of behavioural attributes are keystroke patterns and touchscreen usage. Biometrics can complement, and sometimes replace, traditional means of proving a customer's identity and thereby help to detect fraud.

Biometric technologies can overcome some of the challenges associated with personal identification numbers (PINs) and/or passwords. Such technologies allow, for example, illiterate customers to access payment and other financial services. In addition, biometrics can be used by new customers to provide proof of identity remotely, thereby avoiding a visit to the nearest physical branch of the PSP. This can be particularly helpful in remote locations where branches are few and far between.

Cloud computing

Cloud computing refers to the practice of using a network of remote servers, typically accessed over the internet, for the provision of IT services. Cloud computing offers such advantages as economies of scale, flexibility, operational efficiencies and cost-effectiveness.

By reducing the need for large investments in IT and hence making access to technology cheaper, cloud computing lowers market entry barriers for new providers of payment (and other financial) services, and can be an enabler of innovations in payments. Because ICT infrastructure and

service costs are lower and utilisation is higher, cloud computing can significantly reduce costs for PSPs, making it possible for them to reduce the fees they charge for opening and maintaining an account. In many parts of the world, reducing the cost of banking can make accounts (more) affordable to an important segment of the population.

Contactless technologies

Contactless technologies allow for the transmission of payment information from a physical device without the need for physical contact between the payee's acceptance device and the payer's payment instrument.

Contactless technology can help ease the transition from cash to electronic payments. Furthermore, it provides an important opportunity for those with literacy problems as contactless cards do not require a PIN to authorise a transaction.

Digital identification

Digital identity, or digital ID, refers to a set of electronically captured and stored attributes that uniquely identify an individual. A person's digital identity can be composed of a variety of attributes, including biographic data and biometric data.

Many people have no basic identification, and many more have an identification that cannot be reliably verified or authenticated. The resulting lack of proper documentation is one of the main barriers to accessing financial services. Digital identities therefore have the potential to bring financial inclusion to people who have been locked out of the financial system, in particular by providing access to digital financial services through remote customer onboarding.

Distributed ledger technology

Distributed ledger technology (DLT) can be defined as the processes and related

technologies that enable nodes in a network (or arrangement) to securely propose, validate and record state changes (or updates) to a synchronised ledger that is distributed across the network's nodes.

Since its introduction, DLT has raised expectations that the application of this technology could help to advance financial inclusion. One of the promises of DLT is that it will lower transaction costs, due to the lack of middlemen and the fact that the entire transaction process can be automated. For PSPs, the low cost of DLT could make it feasible to expand their offerings to the unserved and underserved. There is also the potential for higher transaction speed, enhanced reliability and new business opportunities.

Internet of things

The internet of things (IoT) refers to software, sensors and network connectivity embedded in physical objects that enable those objects to collect and exchange data and to send, receive and execute commands.

A major impediment to providing the poor with basic services such as electricity is that they lack credit and the means to consistently pay for goods and services. The IoT enables the integration of automated electronic payments into contractual arrangements, thereby expanding access to assets (such as solar panels) by enabling two new payment methods: pay-as-you-go financing, which allows consumers to pay for products over time, and prepaid, where consumers pay for services on an as-needed basis.

New products and services

Instant payments

Instant payments are payments for which the transmission of the payment message and the availability of final funds to the payee occur in seconds, 24/7, 365 days a year. Many countries have a retail payment system

that meets these conditions, and others are planning to introduce such a system soon.

Because funds are made available immediately to the payee and because person-to-person payments are possible, instant payments closely resemble cash — at least with respect to making payments. People who rely on cash for their daily needs could be tempted to switch to instant payments because of the immediate availability of the funds — just like cash. In addition, instant payments also allow remote payments (unlike cash) and are therefore also suitable for large-volume recurrent payment streams such as pensions and social benefits. The payee account is credited with the funds immediately, not after several days as is often the case at present. This might convince people to open an account in order to receive recurrent payments.

Central bank digital currencies

A central bank digital currency (CBDC) would be a new form of central bank money and would be available to general-purpose users, ie to all interested individuals. Many central banks are studying the potential for issuing their own digital currency. The potential for financial inclusion is one of the main reasons central banks are looking into this new product.

CBDC would combine the advantages of cash with those of having a transaction account, and would make it possible to make and receive electronic payments in central bank money. As with other innovations, however, it would require the use of a (fairly) sophisticated device (eg a smartphone) with access to an advanced (mobile) telecommunications network to make and receive payments.

Stablecoins

Stablecoins have many of the features of more conventional digital currencies (such as Bitcoin) but seek to stabilise the price of

the ‘coin’ by linking its value to that of an asset or pool of assets. Compared with digital currencies, the use of which is limited in part because of their high price volatility, stablecoins could be more capable of serving as a means of payment.

If stablecoins become accepted as a means of payment, they could potentially foster the development of global payment arrangements that are faster, cheaper and more inclusive than present arrangements. This would greatly facilitate cross-border retail payments, such as remittances, and hence improve financial inclusion, both in the sending and receiving country.

New access modes

Electronic wallets

Electronic wallets make it possible to access, manage and use a variety of payment instruments via an application or a website. They can be located on a device, such as a smartphone, or can be remotely hosted on a server. Electronic wallets can support traditional payment instruments such as card payments, electronic funds transfers and e-money, as well as new products such as CBDCs and stablecoins. Electronic wallets can be used remotely for online payments as well as for face-to-face payments at the point of sale.

The adoption of electronic wallets can be beneficial to financial inclusion: to the extent that using a wallet requires maintaining an underlying transaction account, the increasing use of electronic wallets can provide an incentive to open a transaction account. Moreover, the ease and convenience of using an electronic wallet might encourage customers to frequently use their wallet and hence their transaction account.

Open banking

Open banking can be defined as the sharing and leveraging of retail customer data held by PSPs (such as customer transactions and financial history) with third-party

developers and firms to build applications and services and to initiate payments. Customers, of course, must give permission for their data to be accessed by the third party.

Open banking can promote financial inclusion by fostering innovation and stimulating the competition between PSPs to reach parts of the underbanked and unbanked market. It can encourage innovative PSPs to develop new services targeting the financially excluded and it can help to expand access to credit by allowing customers to build a financial profile and a transaction history.

Super apps

Super apps are typically offered by large companies with an established technology platform (often referred to as ‘big techs’) with a view to providing many services in one place. They often start with a single-purpose app, such as messaging, and then add additional services, including payment and other financial services. Super apps usually connect a large number of users, which can lead to more efficient processes and lower costs.

Super apps can promote financial inclusion indirectly by encouraging people who are using super apps to, say, hail a taxi, to make use of the integrated payment services to seamlessly pay for the service they want to obtain. Signing up to the payment service of the super app will usually require establishing a link with a transaction account, either at the provider itself or at a PSP, thereby stimulating unbanked users to open a transaction account.

OPPORTUNITIES AND CHALLENGES OF FINTECH DEVELOPMENTS

This section will discuss the opportunities and challenges of FinTech developments using the analysis of the 2016 PAFI framework. It will look at the impact of FinTech, first, on the drivers of access and use of

transaction accounts and, secondly, on the critical enablers.

PAFI catalytic pillars

As mentioned before, the 2016 PAFI report identifies four catalytic pillars as drivers of access to and usage of transaction accounts: transaction account and payment product design, readily available access points, awareness and financial literacy, and leveraging of large-volume recurrent payment streams. The question now is: how can the FinTech developments described in the previous section foster the PAFI drivers?

This means looking at each of the new technologies, new products and services, and new access modes, and trying to determine if, and how, they can help to eliminate, or at least mitigate, existing challenges and barriers to opening and maintaining a transaction account. Applying the PAFI framework shows that FinTech developments can improve financial inclusion in four broad areas: it can improve the design of transaction accounts and payment products; it can make them ubiquitously accessible; it can enhance user experience and awareness; and it can achieve efficiency gains and lower market entry barriers. However, FinTech does not support all pillars to the same extent: the analysis indicates that it is most helpful to improve the design of transaction accounts and payment products and the ready availability of access points. To improve awareness and financial literacy and to leverage large-value payment streams, however, FinTech has less potential.

Having said that, the analysis also shows that there are potential drawbacks to the use of FinTech. In fact, there are certain risks in terms of operational and cyber resilience, the protection of customer funds, data protection and privacy, digital exclusion and market concentration. It is important that these challenges are properly identified and

addressed. If not, they could undermine financial inclusion objectives. The analysis also underlines how important it is to have regulatory, oversight and supervision frameworks that are effective.

PAFI foundations

The PAFI report identifies three foundations as critical enablers of payment systems and the provision of payment services in general: public and private sector commitment; the legal and regulatory framework; and financial and ICT infrastructures. Keeping in mind the benefits and risks identified by applying the framework to the pillars, one must determine how these foundations can accommodate issues specific to FinTech.

Looking at each foundation in turn, a few general observations can be made. First, many — if not most — FinTech developments are of an international nature, ie they are not limited to one country or one currency. Cross-border innovations call for international cooperation and coordination, and this among the many public authorities involved, such as central banks, banking supervisors, regulators and policymakers. This will promote effective regulation, oversight and supervision while helping to avoid regulatory arbitrage (ie a strategy to exploit regulatory inconsistency).

Secondly, as the speed of innovation in FinTech can be very high, public authorities need to monitor developments very carefully in order to keep their regulatory, oversight and supervision frameworks up to date. This will help to prevent gaps in the framework and make sure that new FinTech business models are effectively covered by the framework. Finally, the role of non-bank providers of payment services has increased significantly in the FinTech era, raising the issue of access to payment infrastructures which historically has been (mostly) limited to banks. Broadening access

to these infrastructures creates opportunities and challenges (for example, with respect to cyber security), and must be considered carefully.

REVIEW OF THE PAFI GUIDANCE

As discussed, the 2016 report outlines guiding principles for achieving the PAFI objectives and contains possible key actions for countries that want to put those guiding principles into practice. This guidance was formulated in a holistic and technology-neutral way, and therefore continues to be relevant in the FinTech era.

Nevertheless, the 2020 PAFI FinTech report provides additional guidance in the form of focused key actions for consideration by all relevant public and private sector stakeholders. These actions are aimed at leveraging the potential of FinTech in a responsible way to achieve the PAFI objectives: stakeholders are encouraged to take further actions that seek to harness the potential of FinTech, while mitigating its accompanying risks. The new actions with focus on FinTech are presented as extensions to the original recommended key actions for consideration and appear as sub-bullets to the existing bullets under each guiding principle. Neither the FinTech-specific extensions nor the original recommended key actions for consideration should be seen as a one-size-fits-all blueprint. As the environment can be very different between countries, the approaches that will work best to foster financial inclusion may also be very different.

CONCLUSION

This paper looked at the joint work of the CPMI and the World Bank regarding payment aspects of financial inclusion, reviewed recent FinTech developments and applied the PAFI framework to these financial innovations. The paper described

how the 2016 PAFI report provides a useful structure to analyse the potential of FinTech for increasing access to and use of transaction accounts and summarised the findings of this review, as published in the 2020 PAFI FinTech report.

In conclusion, the paper shows that FinTech offers opportunities to advance financial access to and usage of transaction accounts. However, financial inclusion strategies that seek to harness the benefits of FinTech should also address the associated risks. Furthermore, special attention should be paid to promoting innovation that does not exclude disadvantaged segments of the population, by encouraging designs that are specifically tailored to the needs of these segments.

AUTHORS' NOTE

The views expressed in this article are those of the author and not necessarily the views of the BIS or the CPMI–World Bank task force.

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