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## GLOBAL FINTECH SME FINANCE PROMISE: OPPORTUNITIES & CHALLENGES

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### ABSTRACT

Financial technology, in short fintech, has revolutionise global financial markets considerably attracting the attention of financial institutions, Governments, multilateral financial institutions such as the World Bank, International Monetary Fund (IMF), Alliance for Financial Inclusion (AFI), among others. First developed in Kenya, East Africa now replicated across the world expanding the financial access frontier to majority of the underserved and unserved segments of the population in a sustainable, safe and affordable manner through access to payment systems, insurance, savings, remittances, credit and other services. Fintech has positively impacted on poverty, jobs, livelihoods and overall boost economic growth and development. However, fintech could be disruptive and may have huge consequences in terms of losses and socio-economic impact as witnessed by the long history of financial crises – Asian and Global financial crises of 1997 and 2008 respectively. In many circumstances, financial innovation triggers widespread instability if not checked. The study examines the significant role of fintech in financial inclusion drive however, its consequences may be greater with resultant costs in terms of increase in suicides, huge indebtedness, with resultant aggressive loan recovery methods, increase poverty, loss of dignity and more serious case of financial distress, financial instability and considerable resolution costs.

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### INTRODUCTION

Vast majority of poor households live and work in the informal economy with less access to productive resources including finance from the formal sector. This has over the years aggravated their condition including difficulties in gaining wage-earning opportunities. They live and work in the informal economy—not by choice, but by necessity, (Jaabi, 2016). In economic terms, they are consuming households and self-employed firms at the same time; thus consumption and production decisions are intertwined. As a result, they need a broad range of financial services to create and sustain livelihoods, build assets, manage risks, and smooth consumption. This manifest a global chain call from policy makers, multilateral organisations and governments to bring finance to the doorsteps of the majority of the population in developing countries who are generally unbanked and under-banked. It is against this background that access to finance, financial inclusion and financial sector development have long been major policy objectives of countries and development

partners across the globe. Over the last century, series of initiatives have aimed to increase access to finance and financial inclusion, but these have accelerated in the last decade as technological developments combined with strategic policy support show potential for progress beyond anything that has been achieved and imaginable. The World Bank's 2017 Global Findex shows that in the last three years, 515 million adults acquired a financial account, and between 2010 and 2017, 1.2 billion people opened an account with a formal financial institution or mobile financial services provider (including mobile money operator - MNO) for the first time. This is impressive progress by any measure, but much remains to be done as of 2017, 1.7 billion<sup>1</sup> people of 16 years or older still did not have access to a bank account or open mobile money account, some 31 percent of the world's adult population. The number of financially excluded are still disproportionately higher in developing and emerging market countries -Sub-Saharan Africa (SSA), South-east Asia and Latin American regions though there has been substantial progress, as most of

<sup>1</sup> Global population financially excluded

the 1.2 billion people who gained access to an account for the first time in the last eight years live in developing countries and emerging markets where mobile penetration is getting higher compared to developed economies. It is worth noting that particular progress has been made in East and West Africa, China and India. Globally Micro Small and Medium Enterprises (MSMEs) account for 90% of all firms while number of formal MSEs reached 315 million globally, (AFI 2020). Formal enterprises by size, 90% account for micro enterprises with 10% Small and Medium Enterprises (SMEs). Informal MSMEs form 80% of total MSMEs and 23% of this number are women-owned MSMEs (World Bank 2019). Total formal MSMEs finance gap reached over USD5 trillion. Formal financing gap formed 57% while current supply of finance recorded 43%, manifesting a lot is needed to meet the financing gap. Total formal microfinance gap reached USD662 billion (13% of total financing gap of USD5 trillion with 87% financing gap for SMEs equivalent to USD4.4 trillion).

**Progresses in Financial Inclusion:** It is important to note that much of the progress from 2010 to 2017, was related to the impact of financial technology (FinTech) in a number of countries. Three examples stand out.

- The first is the development of mobile money, particularly in Kenya<sup>2</sup> and Eastern Africa, where FinTech has done the most to promote financial inclusion by allowing the unbanked to make payments, remit funds and save using their mobile phone.
- The second, is the Chinese example, where a traditional and not overly efficient financial system became one of the world's most digitised financial systems. This process was accompanied by the single greatest decrease in poverty in world history with unprecedented access to finance by lots of people to transact, make payments, insurance, money transfers, savings, among others.
- The third major example is India, where financial access increased dramatically in a very short time. As of 2017, 80 percent of adults in India had an account in a bank or with a mobile money operator. This is the result of a major strategy to build an ecosystem for a new digitalised economy and financial system, in particular, underlying infrastructure and an enabling policy environment. Among other things, this has led to approximately 350 million people gaining access to accounts for the first time in India.

**Why Financial Inclusion Matters:** Financial inclusion involves the delivery of financial services at an affordable cost to all segments of society. According to the Alliance for Financial Inclusion (AFI), "access to financial services is the grounding principle" of financial inclusion and has advanced the course of making access to finance a Human Right as referred to by Muhammad Yunus, Nobel Laureate and former Managing Director of Grameen Bank in Bangladesh. Financial Inclusion is considered to have three main dimensions: access, usage and quality. Today, financial inclusion is a significant international policy goal, including as an enabler of many of the UN Sustainable Development Goals (SDGs). In 2015, approximately two billion people (roughly 38 percent of

the world's adult population) did not have a formal bank account. Figures for 2018 show a substantial drop in this figure, indicating that we are making progress but still greater room for improvement. The majority of the unbanked live in developing economies and emerging markets and are unable to procure, or deliver, the necessary paperwork to open an account, or if they can't afford an account, cannot afford the time off work and travel costs to attend a branch.

Financial inclusion is vital to improving the livelihoods of the poor and the disadvantaged communities. Providing people in developing and emerging economies with access to financial services, such as payments, savings, insurance and credit, helps them to manage their financial obligations, smooth consumption patterns and better build futures for their families while also supporting broad economic growth, development and poverty reduction.

- i. This is achieved by making individuals less vulnerable by enabling them to learn skills, earn income, save so as to increase their resilience, and invest in their education, health and microbusinesses.
- ii. Second, financial inclusion can make the management of daily life far more efficient: electronic payments allow people to pay for essential services without taking time off work to pay the bills in person.
- iii. Third, inclusion enables the shifting of financial risks from individuals to the financial system where these risks can be socialized and diversified, for instance, insurance against severe illness of the family breadwinner, businesses, agricultural activity to prevent people from falling back into poverty.
- iv. Fourth, financial inclusion supports economic growth by expanding access to financial resources that support real economic activity, particularly for individuals and MSMEs. It also supports broader economic growth by underpinning a local currency based financial system in which local savings fund local investments.

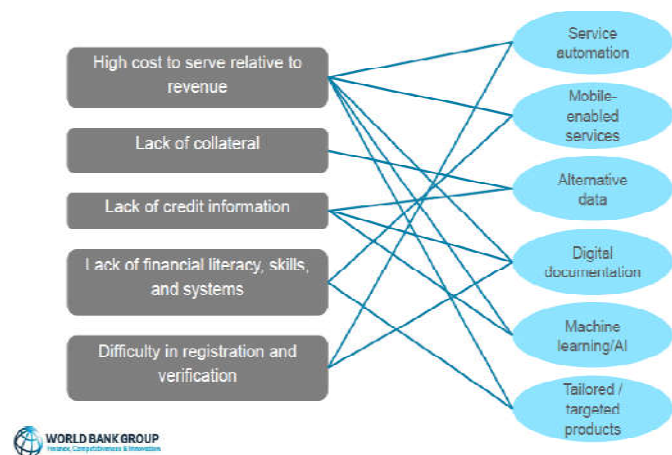
**A Renewed Focus On Financial Inclusion:** The 2008 global financial crisis prompted a renewed focus on financial inclusion and financial system reforms. A group of developing countries' Central Banks established the Alliance for Financial Inclusion (AFI) in 2008 to focus exclusively on supporting financial inclusion. As of July 2017, the AFI network represented 85 percent of the global unbanked population. At its annual Global Policy Forum in 2012, its members signed the historic Maya Declaration on Financial Inclusion, a framework for developing countries to commit to concrete financial inclusion targets and national policy changes. Several other AFI agreements followed the Maya Declaration, including the Sasana Accord, the Sharm El Sheikh Accord, the Souchi Accord, the Bali Accord, and, most recently, the Kigali Accord which recognizes the relationship between climate change and financial exclusion and sets quantified targets for green finance and climate change. Also, the Gender Working Group established to promote equal opportunity for women's access to sustainable financing. The 2008 financial crisis also prompted sweeping regulatory responses coordinated by the Group of G20 aimed at building a resilient global financial system. As part of its core efforts, the G20 has focused much attention on supporting economic growth, including through financial inclusion and financial development to support real economic activity and poverty reduction. At the Pittsburgh Summit in September

<sup>2</sup> Developments of Safaricom, Equity Bank banking models and digital credit helped boost financial access frontier

2009, G20 leaders committed to improve access to financial services for the poor. They established the Financial Inclusion Experts Group (FIEG), which developed nine principles for innovative financial inclusion. The FIEG also recommended the creation of the Global Partnership for Financial Inclusion (GPFI), which was established at the Seoul Summit in November 2010 at which the G20 leaders endorsed the first Financial Inclusion Action Plan (FIAP).

**Digital Financial Inclusion:** AFI, Global System for Mobile Communications (GSMA), the World Bank, among others, have identified technology as a core driver of financial inclusion. Over the last decade of market development, digital financial system (DFS) has expanded access to financial accounts and diversified from basic money transfer and bill payments to merchant payments, bulk disbursements, credit, savings insurance and value-added services like PAYG energy, crowdfunding, savings group and value chain digitization. Most DFS target the mass market and, despite progress in reaching the previously under and unserved, DFS users remain disproportionately male, young and urban, in contrast to the traditionally female microfinance demographic. Digital finance delivered through mobile phones and agent networks has dramatically reduced the cost of providing financial services to the mass market in Africa, (Jaabi 2016). Commercially motivated DFS providers — MNOs, financial institutions, Fintechs — have entered the market to grow their customer base, diversify revenue streams and boost brand loyalty. The transaction-based fee structure of DFS has fueled an ‘inclusive’ drive to maximize transaction volumes along money transfer corridors. As a result, financially excluded groups like rural residents, low-income earners, microentrepreneurs and women, have gained access to DFS, albeit at lower rates than their urban, salaried, male counterparts.

From Figure 1 below, key financial inclusion challenges are being addressed through fintech mobile enabled services. This has expanded access to finance in east Africa – Kenya for example through digital credit

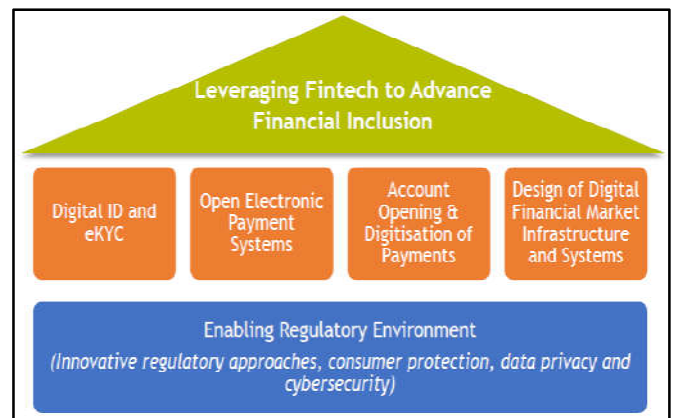


Source: World Bank 2019

**Figure 1. Fintech can address key inclusion challenges for SMEs**

Over the last decade, product and business model evolution have generated a greater variety of formal financial services available to the formerly unbanked. Although cash-in and out (74 - 75 percent of transactions), airtime purchases and bill payments (4.5 percent and 15.3 percent of outgoing

transactions) respectively remain dominant, digital finance offerings are diversifying to merchant payments (8.8 percent of value), bulk disbursements, credit, savings and insurance. Moreover, third parties, aggregators and Fintechs have leveraged digital finance to offer value-added services like PAYG energy, layaway financing, crowdfunding or alternative lending, savings group and value chain digitization. Fintech witnesses the burgeoning activity going on in the grassland of the financial industry. Policy makers, regulators, supervisors and international institutions have taken full notice of it and are beginning to explore the new environment. Digital technologies are also potentially reshaping regulation (regtech) and supervision (supotech) of financial activities. Finally, the academia is responding with conferences and journal special issues focused on research about Fintech.



**Figure 2. Leveraging fintech to expand financial access frontier**

Figure 2 above showed how fintech advances the course of financial inclusion leveraging on digital identities and electronic Know Your Customer, Electronic payment systems, digitalization of payments and design of digital financial market infrastructure and systems. While enhancing and enabling digital payments, some level of surveillance or supervision is required that are not stifling innovation but enhance consumer protection, data privacy and cybersecurity of systems from hackers. Fintech covers a broad area of activities and businesses ranging from the development of new technologies to the commercialization of financial services. From a financial policy perspective, the Financial Stability Board (Financial Stability Board, 2017) organizes Fintech activities in five broad categories:

- (i) Payments, clearing and settlement;
- (ii) Deposit, lending and capital raising;
- (iii) Insurance;
- (iv) Investment management; and
- (v) Market support.

These five classes cover virtually all the spectrum of services provided by traditional financial institutions. New Fintech companies are threatening market shares and profit margins of the incumbents in virtually all business areas. Fintech firms are using technological innovation to take advantage of these features of banks’ business model, adding value to banks’ services and trimming bank profits due to ease of onboarding, intensive use of remote distribution channels and agents. Client acquisition is also fostered by an extremely close attention to customers’ needs, particularly the millennials

who place a high value on accessibility, speed, and user-friendliness. Fintech ecosystem is populated by firms offering basically all kinds of financial services. Equity financing to the fintech space increased from 2 to 22 bn USDollars (Accenture, 2016). This has increased to USD37.9 bn global investment in 2019. With the increase prominence of fintech in the industry vis-a-vis the viability of banks as traditional financial institutions. McAfee and Brynjolfsson (2017) quoted strategist Tom Goodwin pointing out a pattern: “Uber, the world’s largest taxi company, owns no vehicles. Facebook, the world’s most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. Also Airbnb, the world’s largest accommodation provider, owns no real estate.” By extrapolating, can we envisage in a not so far future the world’s largest provider of fintech banking services with a very thin balance sheet?

Goldfarb & Tucker (2017) identified five types of economic costs that are abated by digital technologies: (i) search costs; (ii) replication costs; (iii) transportation costs; (iv) tracking costs; (v) verification costs. The big promise of Fintech is to build on the potential cost-cutting allowed by digital technologies to dramatically reduce financial frictions. Even in the short run, the resulting gains are substantial. The Financial Stability Board estimates suggest that mortgage borrowers in the USA and European markets could potentially save \$480 to \$960 per loan and banks would be able to reduce costs in the range of \$3 billion to \$11 billion annually by lowering processing costs in the mortgage origination process using fintech.” (Financial Stability Board, 2017, p. 10). Banks are actively responding to the threat posed by Fintech firms, although they are somewhat slowed down by old and complex IT systems that are not designed to take advantage of the more recent advances in technology. In some cases, banks are trying to replicate Fintech models, such as by setting up online lending platforms. Other intermediaries are partnering with the new entrants, externalizing part of their production processes to exploit Fintech firms’ greater efficiency. Many banks consider the adoption of new technologies a strategic priority. The most likely scenario is that margins will shrink and some of the products now offered by banks will also be provided by other firms.

**Theoretical considerations:** Poverty alleviation through access to finance has been one of the key development challenges over the decades. One of the identified key constraints faced by the poor or MSMEs is lack of access to formal sector credit. It will facilitate them to take advantage of economic opportunities to increase their level of output, hence move out of poverty. Credit is an essential input to increase productivity, mainly land and labour. It is understood that credit boosts income levels, increases employment at the household level and thereby alleviates poverty. Credit facilitates the poor to triumph over their liquidity constraints and undertake some income generating activities. Furthermore, credit helps poor to smoothen their consumption patterns in times of lean periods of the year (Binswanger & Khandker, 1995). The improved consumption is an investment in the productivity of the labour force and human capital. Hence, credit will maintain the productive capacity of rural poor households (Heidhues, 1995; Hulme and Mosely, 1996; 1998; Navajas *et al.*, 2000). The proposed goal of digital finance (fintech) is to improve the welfare of the poor as a result of better access to small loans on a sustainable basis. Lack of access to credit may have negative consequences for

various household level outcomes including technology adoption, agricultural productivity, education, food security, nutrition, health and overall welfare. Access to credit, therefore, affects welfare outcomes by alleviating the capital constraints of poor households. In addition, it increases the poor households’ risk-bearing ability, improves their risk-coping strategies and enables consumption smoothening over time. By so doing, Fintech is argued to keep the global SME finance promise - improving the welfare of the poor and MSMEs financing requirements (Jaabi 2014; Navas., 2000; Diagne & Zeller, 2001). Through adoption of technologies, Fintech programmes have a significant contribution to economic, social, political and psychological empowerment of the poor in general, women in particular. The timely and adequate access to credit, savings, insurance and entrepreneurial training, women have become successful entrepreneurs, increased their household income and well-being. There are a couple of studies (Hossain, 1988; Remeny and Benjamin, 2000; Otero and Rhyne, 1994; Khandker, 1998; Mosley, 2001) that argued that access to finance is very helpful in improving the economic and social welfare of households in Bangladesh, Bolivia, Indonesia and most developing countries with impressive outreach to a large number of active MSMEs. The growing realization in the low-income households is that they can profit more through access to a broader set of financial services (financial and non-financial services) than just credit (Aghion & Morduch, 2005; Shetty, 2008). However, impacts of these services have been little documented up to now (Zeller and Meyer, 2002; Godquin, 2004; Aghion & Morduch, 2005). In the light of this, this paper attempts to look at the promise of Fintech in delivering various digital financial services to the MSMEs and its social and economic impact in improving the welfare of the active poor. In this section, we review past studies on financial inclusion and fintech in particular in promoting MSMEs financing. Key issues touched here included definition of terms, asymmetric information, demand-side and supply-side constraints, pecking order theory and financial and institutional developments, Mobile payments in relation to financial access.

**Definition of Terms:** Fintech can be defined as advances in technology that has the potential to transform the provision of financial services spurring the development of new business models, applications, processes and products. With no brick and mortar, access to diversified financial services are conducted in remotest parts of the developing world in a safe and sustainable manner real time. This has considerably addressed the constraints of access to physical bank branches that are evidently absent in most rural communities. Financial inclusion is defined as “drawing the “unbanked” population into the formal financial system so that they have the opportunity to access financial services ranging from savings, payments systems, remittances, credit and insurance.” (Hannig & Jansen, 2010). In simplest form, Sarma (2008) defines financial inclusion “as a process that ensures an ease of access, availability and usage of financial services to all members of society”. Digital Financial Services is the broad range of financial products and services (including payments, transfers, savings, credit, insurance, remittances) delivered via digital/electronic technology.

**Asymmetric Information:** The Asymmetric Information Theory (AIT) argues that entrepreneurs do not have full information of the business income streams and growth opportunities which are not readily available to external

financiers - equity investors and creditors. The AIT further argued that smaller and younger firms tend to report higher financing obstacles than larger and older firms (Berger & Udell, 1998:615-618, 2006 and Becks et al 2004, 2006). Imperfect information and high transaction costs are factors driving the limited access to external formal finance by fish SMEs (Stiglitz & Weiss, 1981:393). The problems of adverse selection and moral hazard are relevant in SME financing in developing countries; as a result, credit is rationed with the possibility that some eligible enterprises are denied credit (Stiglitz & Weiss, 1981:393-405). Formal financial information requirements in the form of audited financial statements and business plans are difficult for most SMEs to provide, or even if provided often lack detail, quality and rigor (Berger & Udell, 2005:1-3 and Michaelas et al, 1999:116). Most small enterprises are often not registered with the authorities and do not keep proper record of transactions to facilitate efficient appraisal and monitoring. The situation is further compounded with low collateralised assets to relax information asymmetries (North, 1990; Rocca et al, 2009:12). As a result, external financiers had no option but to limit their financing to vulnerable MSMEs to control the incidence of non-performing loans. Under this situation, most external financiers either reduce the amount of financing sought, ration or deny access altogether (Stiglitz and Weiss, 1981: 393-394, Djankov et al, 2007:299-305; Marcel, 1994:2-3; Fafchamps *et al*, 1995:1-5).

Studies have shown that business start-ups are generally more informationally opaque constraining their access to external funding (see Beck et al, 2006; Berger and Udell, 1998, 2005 and Stiglitz and Weiss, 1981). Smaller and younger enterprises are less leveraged due to their high information opacity compared with larger and older enterprises. This has inhibited young and small enterprises from accessing external finance as they find it difficult to raise positive cash flows at initial stages of their existence<sup>3</sup> to service loan interest payments. However, the pioneers of the Fintech revolution demonstrated tangible market opportunities, substantial business model innovation has expanded the "access possibilities frontier." More recently, technological innovation has dramatically lowered the fixed costs of reaching the low-income segment and attracted a broader range of new market players. In Kenya today, thousands of women can access limited daily digital finance loans. Developments in policies are a key complement to private sector innovation through regulatory frameworks, public ownership, the provision of market infrastructure, and measures that lower demand-side barriers.

**Pecking Order Theory (POT):** The Pecking Order Theory (POT) developed by Myers (1984) argues that enterprises finance their businesses in a hierarchical manner. Myers (1984), Myers & Majluf (1984) argued that the choice of financing is based on the relative costs of the various financing sources. In this regard, the theory suggests MSMEs prefer to choose internal financing sources (personal funds, retained earnings and profits) with relative lesser costs and they will only turn to external finance (debt and equity) when internal funds are inadequate. Therefore, POT showed that enterprises due to opacity problems tend to prefer retained earnings as the

lesser information sensitive security (Rocca et al, 2009:5-9; Myers, 1984:576 and Myers & Majluf, 1984) before external debt and equity capital<sup>4</sup> in the later stages through to maturity. External debt is also preferred to equity as the latter dilutes ownership with subsequent takeover of the business. Indeed, MSMEs suffered acute formal financial access instead rely on informal financing sources.

**Supply-Side Constraint:** Supply-side constraints are factors that limit the economy's ability to produce or export more goods to global markets. Efforts to address weaknesses in public sector policies and regulatory frameworks, governance, physical and financial infrastructural development, human resource skills and market information will effectively stimulate enterprise increasing access to formal external finance and enhance their global market participation and competitiveness (UNCTAD, 2006) (also see Fulgencio, 2009; Rogers, 2009; Chandra & Kolavalli, 2006; Lall, 1992:168). Most development economists have expressed doubts over free markets and global trade benefits to developing SSA economies, in particular, its agricultural export sector which is beset with severe supply-side constraints<sup>5</sup> (UNCTAD, 2006; Fulgencio, 2009:436-441). Inefficiencies at firm level, lack of requisite human and financial resources, weak business environment (Gelb et al, 2007), weak creditor right protection and costly doing business indicators have to a greater extent undermined sustainable financial access and growth of MSMEs to integrate fully in global markets (Rogers et al, 2009 and Marco, 2004). Accordingly, the ability of economies to address supply-side constraints are able to benefit from increased production, exports, rapid growth, increase employment, value addition and wealth creation (Rasiah, 2007).

The severe supply-side constraints have resulted to weak SSA industrial sector turning the region into world's least developed economy (Sachs, 2007:827-830, Lall et al, 2005, 1992). Calls for joint corrective action suggest various policy measures including crucial infrastructural development. The adequate supply of infrastructural services (water, telecommunication, power generation capacity, roads, transport, marketing and other enabling institutions) has long been viewed both in policy debate and academic literature (World Bank, 1994) as key pre-requisite for economic development. Consensus has emerged on related empirical literature (World Bank 2006) that under favourable conditions, infrastructural development are critical in promoting economic growth. For Sub-Saharan African countries to take opportunities of growth and economic development, we must participate and compete in global trade as it is the engine of economic growth. With globalisation today, many people, goods and services are crossing the borders than ever before, trade with value addition is therefore a driver of better jobs, shared prosperity and poverty reduction in many countries.

Trade causes growth (trade - growth nexus) with countries that are more open to trade experience higher

<sup>4</sup> Pinegar & Wilbricht (1989) showed that financial debt is relatively preferred to equity as a way to raising funds and keeping control of the business.

<sup>5</sup> Despite some concessionary schemes such as the U.S' African Growth and Opportunities Act (AGOA) and the EU's Everything But Arms (EBA) most African economies failed to benefit from these opportunities due to inherent difficulties in accessing finance, low productive capabilities, lacking technologies, non-conformity with product standards and poor connectivity in global trade.

<sup>3</sup>Tarinyeba (2009) among other authors argued that majority of small enterprises opt for informal credit due to high costs, information asymmetric and other constraints in accessing finance.

economic growth (Rasiah, 2012, Stiglitz 1998, 2012). Through trade participation, spillovers, tech transfers and learning enhance the competitiveness of domestic economy.

**Demand-Side:** Several studies including Becks et al (2005, 2006, 2008), Ayyagari et al (2003) and Fafchamps et al (1994, 1995) have argued that capital shortage is a major problem militating against MSME growth. However, it is argued that banks do often have excess liquidity to lend than MSMEs were willing to borrow (Osei-Assibey, 2011:153). This is blamed on slow industrial growth of MSMEs and their low absorptive capacities coupled with low capabilities and scale to meet lending requirements of banks (Berger & Udell, 1998, 2006). As a result, most MSMEs in LDCs face difficulties in accessing formal external finance, forcing many to resort to informal financing sources, such as, personal, family, non-governmental organisations (NGOs) and trade credit to address their financing needs. However, these informal sources are often limited to meet enterprise growth financing requirements.

**Financial and Institutional Development:** There is a general consensus among many development economists (Becks, Demircuc-Kunt, Laeven & Levine 2005; Levine 1997; Demircuc-kunt, 2008; Hussein & Demetriades, 1996) that financial and institutional developments relieve constrains on enterprise financing obstacles. Accordingly, Levine (1997) argued that financial sector development is an important ingredient as it unlocks finance for MSME financing, thus enhancing economic growth. Enterprises' lack of access to credit has been identified as one of the factors that not only engender poverty and income inequality (Demircuc-Kunt & Levine, 2008) but also constrain economic growth and development (see Flessig, 1996). There is general consensus among many researchers on a positive finance-growth nexus and substantial empirical evidence exist that supports this trajectory. The works of Hussein & Demetriades (1996) and Levine & Demircuc-kunt (2008) are indeed robust on financial sector development on enterprise access to finance. However, in SSA where financial sector is shallow and underdeveloped, banks have over the years failed to show much presence in financing micro and small enterprise market. This coupled with market imperfections; institutional weaknesses and poor infrastructure make MSMEs financing huge challenge in developing countries. Addressing these issues may require a long-term solution. In the short-run, much collaboration in the form of financial linkages, institutional innovation, adoption of technologies in financial products delivery (fintech), addressing collective action problems and crucial role of public sector agencies can be valuable in increasing MSMEs' financial access. There is substantial evidence that financial development has a causal impact on growth, (Beck 2006; Hussein & Demetriades, 1996; Demircuc-kunt, 2007). A prominent explanation is Schumpeter's view that finance fuels "creative destruction" by allocating resources to newcomers that promote innovation and possibly topple incumbents. Along these lines, access to finance for new entrepreneurs is an important ingredient in the finance-growth nexus.

**Mobile Payments:** Globally, 4 billion mobile phone subscriptions were recorded in 2009, rising to 5 billion in 2012 to 5.7 billion in 2018, well over half of them in the developing world. Mobile phone penetration in developing countries has almost tripled in the past five years, with Asia in particular showing high growth rates. In Kenya, for example, 47 percent

of adults own a mobile phone, and the rate of ownership rises to 73 percent in urban areas and 80 percent in Nairobi (cgap, 2012). Proliferating mobile phones open another delivery channel for basic financial services to MSMEs. This new technology drastically reduces the costs of convenient and real-time financial transactions, expands access points, lessens the need to carry cash by introducing e-money, wallets and attracts previously unbanked customers. Several country cases illustrate the promise of mobile payments for financial inclusion. The Philippines launched the first successful mobile payment service in a developing country in 2004. Two mobile payment operators have an estimated 7.5 million customers. Mobile phone transactions cost about one-fifth of those executed through bank branches<sup>6</sup> (Honoban et al. 2009). In Kenya, the e-money transfer service - M-PESA offered by mobile network operator - Safaricom has achieved the most impressive outreach of mobile payments, thus reaching 5.5 million transaction volume in a day (World Bank 2020). The service has experienced rapid growth and currently enjoys a subscription base of more than 11 million registered customers in 2008 to 32.5 million in 2018, majority previously unbanked. A recent national survey illustrates the positive impact on financial inclusion: the usage of semiformal services including M-PESA has increased from 8.1 percent in 2006 to 17.9 percent in 2009 up to 28% in 2014, while the proportion of the population with access to only informal financial services decreased from 35 percent in 2006 to 26.8 percent in 2009 to 18% in 2014. Most important, the share of the population excluded from financial service decreased from 38.3 percent to 32.7 percent and 17.7 percent over the same time frame. Mobile payments cut across various regulatory domains, including banking, telecommunications, payments systems, and anti-money laundering regimes. Where mobile payments have taken root, regulators have tended to adopt a "test and see" approach that allows operators to experiment and develop their business models under close supervision. Once market innovation and learning have satisfied the needs of regulators and mobile operators, regulation has been created and implemented to provide legal certainty and to create a level playing field to allow new players<sup>7</sup>. In any case, some form of regulation is required with potential risks of AML/CFT, KYC, KYCC, CDD issues.

## MATERIALS AND METHODS

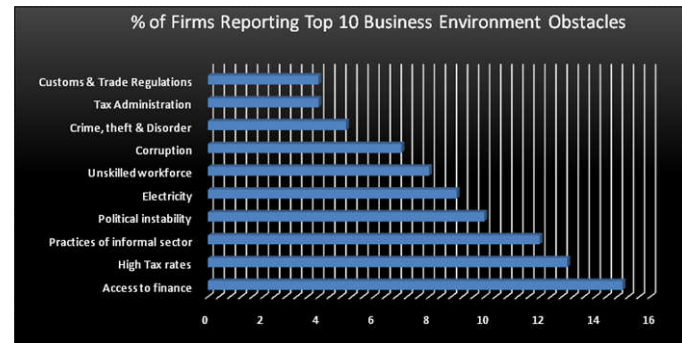
This section presents methodologies adopted in this paper to assess fintech global contributions to increasing enterprise finance and its challenges of disrupting the smooth operations of the financial system. Fintech's contributions to the economy, health and education has uplifted many under privilege population in Africa, Asia and Latin American countries with a convenient access to finance – savings products, remittances, payment system, micro insurance among others across the globe. However, the 2008 global financial crisis in the USA that spillover to economies around the world was attributable to irresponsible digital finance. We will examine the contributions and disruptions of fintech across the developing world and make recommendations of how to address the concerns associated with digital finance.

**Fintech SME Finance Promise:** Fintech is committed to build on the efforts of banks, microfinance institutions, MNOs,

<sup>6</sup> Cost of mobile payments \$0.50 versus \$2.50 at branch level

<sup>7</sup> See Central Bank of Kenya approach to regulating agency banking and mobile money instruments

development finance institutions (DFIs) and other formal and non-bank financial institutions to expand the financial access frontier. Fintech leverages digital technologies to reach the remotest parts of the country with diverse range of financial products and services on a sustainable and affordable manner. It is the main driver of financial inclusion across the globe. Today hundreds of thousands of Kenyan women can access daily digital credit (with threshold valued transactions) every early morning at 06.00 hours, use the funds and repay the loan by 22.00 hours. This and many other interventions have improved lives for the better in developing economies across the world. Across the world, MSMEs have ranked their constrains of financial access as shown below.



Source: World Bank, (2020)

Figure 3. Top 10 Business Environment Obstacles

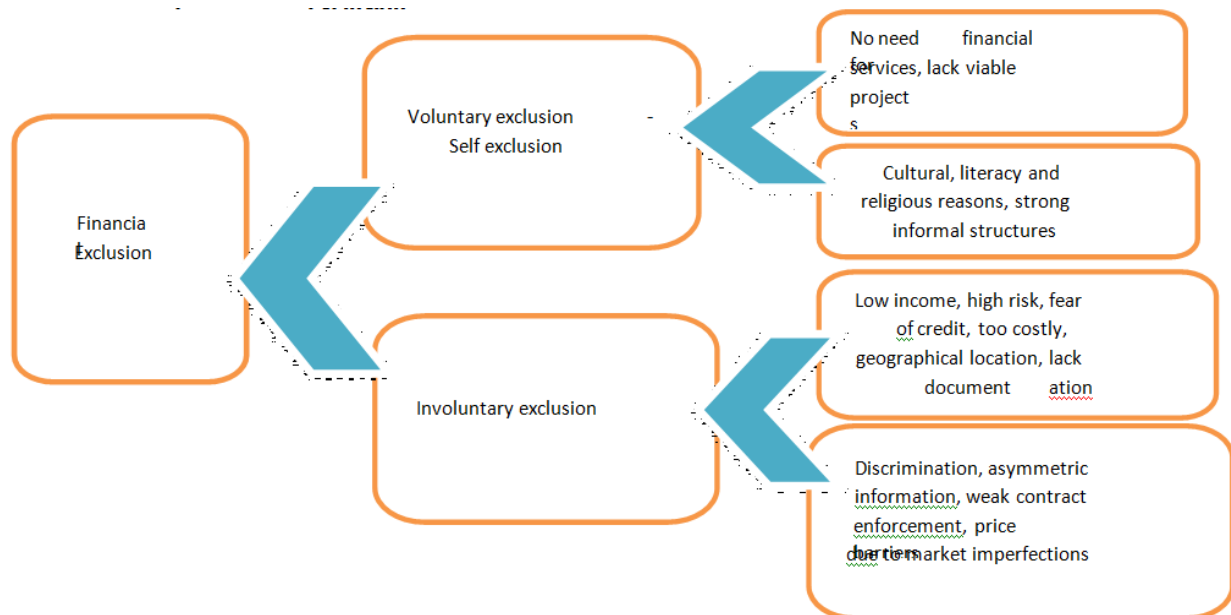
The Figure 3 above, Access to Finance proves to be the most constraining business environment obstacle among MSMEs in the developing world followed by high tax rates, high informality in the business activity. With the realization of Fintech promise to address this credit gap and other financial products and services, MSMEs have the potential to grow organically to build incomes, profits and assets for future consolidation. Globally account ownership saw 69 percent of adults have an account in 2018, up from 62 percent in 2014 and 51 percent in 2011 (World Bank 2011).

institution or through a mobile money operator. In 2014 that number was 2 billion, (World Bank Findex 2018 report). High account ownership is universally high in High-Income economies with over 89% in 2016, virtually all these unbanked adults live in the developing world. Indeed, about half of the unbanked live in seven developing economies - Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan. Fifty-six percent of all unbanked adults are women, (World Bank 2018). Women are over-represented among the unbanked in economies even where only a small share of adults are unbanked.

There are five distinguishing factors that account for the lack of financial inclusion (exclusion) with globally 1.7bn being financially excluded (AFI 2018):

- I. Access exclusion due to geography and “risk management of the financial system”
- II. Conditional exclusion “due to conditions that are inappropriate for some people,”
- III. Price exclusion due to non-affordability of financial services,
- IV. Marketing exclusion due to the non-attractiveness of conducting business with certain groups within society (credit risk), and
- V. Self-exclusion, due to “fear of default, cultural and religious reasons or due to psychological barriers,” (Sarma (2010), Kempson& Whiley (1999a, 1999b)

These different factors arise from both supply and demand-side channels that restrict financial access to enterprises. For example, cultural and religious factors may undermine demand for banking services. In addition, strong tribal structures may imply a preference for clan-based lending and borrowing over modern banking, which many find such traditions difficult to overcome. Modern banking requires literacy skills that are often not present, particularly in rural remote locations in developing countries.



Source: Jaabi, 2014

Figure 4. Financial Exclusion

Account ownership varies among economies and by individual characteristics like gender, location and income. The unbanked reached 1.7 billion adults —without an account at a financial

Financial exclusion is costly to society, enterprises, economies and the individuals as captured in Figure 4 below. As far as the individual is concerned, lack of financial access forces the

unbanked into informal banking sectors where interest rates are higher, the amount of available funds much limited and unreliable for sustainable financing, (Jaabi 2014). As the informal banking structure is outside any legislative framework, there are difficulties to settle any dispute between lenders and borrowers legally. Borrowers are at much greater risk of usury and exploitation. Poverty and informal banking sectors often constitute a vicious cycle that borrowers cannot escape. Women are highly unbanked in most economies, particularly in developing countries. This is true even in economies that have successfully increased account ownership and have a relatively small share of adults who are unbanked as in Kenya, Tanzania, Uganda, Ghana and Turkey. In Kenya, where only a fifth of adults are unbanked, about two-thirds of them are women. Women make up nearly 60 percent of unbanked adults in China and India and an even higher share in Turkey. Things are not much different in economies where half or more of adults remain unbanked: in Bangladesh 65 percent of unbanked adults are women, and in Colombia 56 percent of unbanked are women, (World Bank 2018).

Women are over-represented among the globe's unbanked adult population, about 980 million do not have an account, 56 percent of all unbanked adults globally. From a macroeconomic viewpoint, this exclusion is driven by a lack of demand. Some individuals or enterprises may be involuntarily excluded from the financial system because they do not have sufficient income (effective demand) or in credit markets, have an excessive lending risk profile. This type of involuntary exclusion is also not the result of market failure, though demand could be stimulated through economic growth and expansion. A second category of involuntarily excluded persons consist of the segment of individuals and businesses that are denied financial services as a result of market imperfections. Small businesses, including farmers are a crucial pathway out of poverty and provide 95 percent of jobs in low-income countries, but the financial services they need to support growth and job creation is often severely limited—particularly in low-income countries, where 44 percent of small businesses are financially excluded. Globally and in mostly in developing countries, level of education, employment, location, sex, income and economic development

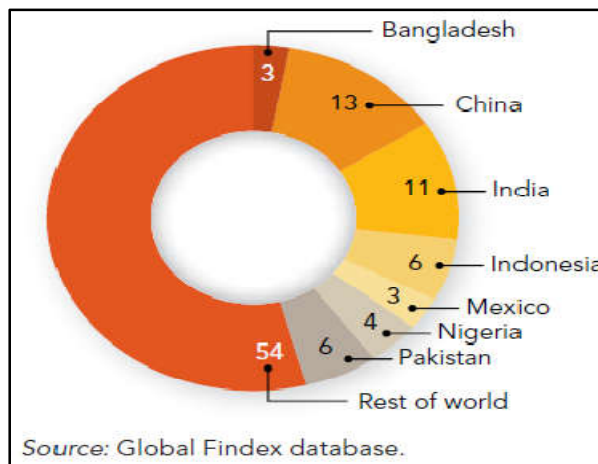
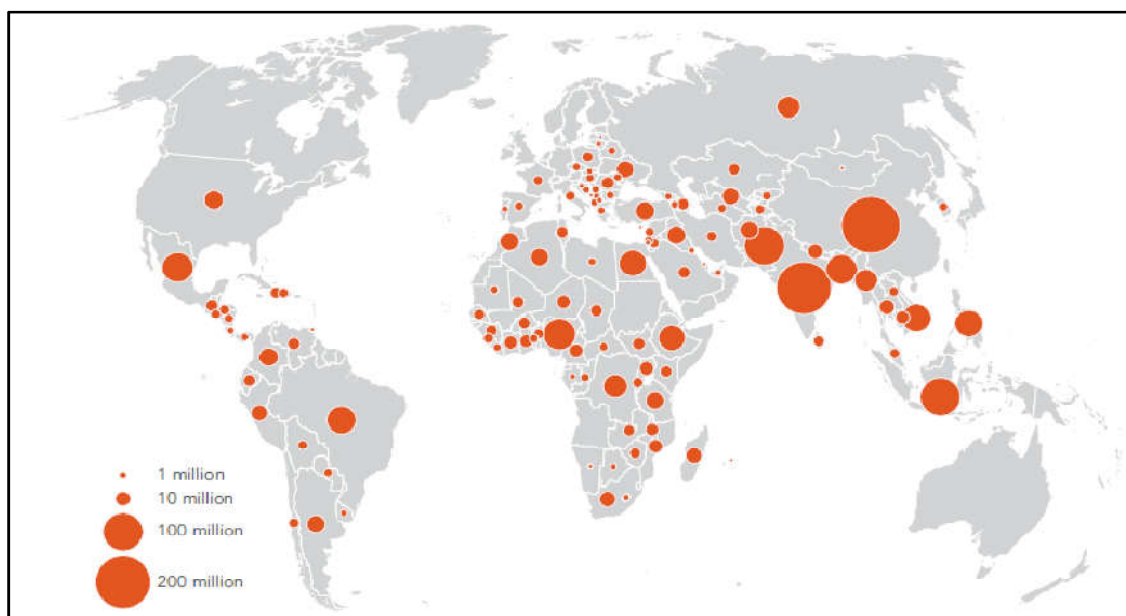


Figure 5. Global Findex on Financial Exclusion



Source: World Bank Findex 2018

Figure 6. Global 1.7 Billion Adults Financially Excluded

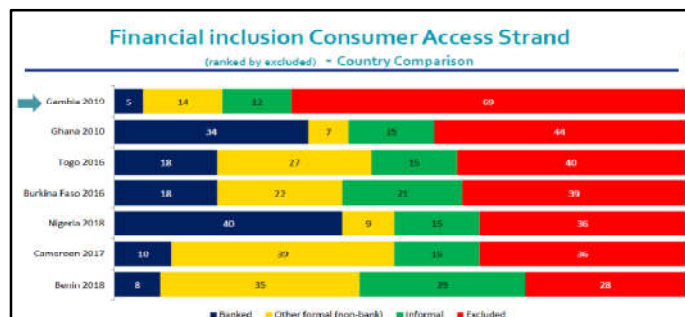


patterns distinguish the level of financial inclusion. Unbanked adults are more likely to have low educational attainment. In the developing world more than 50 percent of all adults have a primary education or less are among two-thirds share of unbanked adults. Those active in the labour force are less likely to be unbanked. While about 47 percent of all adults in the developing world are out of the labour force with 56 percent of this number being unbanked. Among the unbanked, women are more likely than men to be out of the labour force. Two-thirds of unbanked adults globally (estimated to be 1.1 billion) have a mobile phone, especially in Sub-Saharan Africa. These technologies could help overcome barriers that unbanked adults say prevent them from accessing financial services, thanks to fintech. Mobile phones could eliminate the need to travel long distances to a financial institution branch or agency for a transaction. By lowering the cost of providing financial services, digital technology succeeded in increasing their affordability. The World Bank Global Findex report released in April 2018 revealed that fintech in Ghana registered a steep rise in the number of adults owning an account from 41% in 2014 to 58% in 2017 to close at about 72% in mid 2019. This was mostly attributed to the great innovation in digital financing and mobile money services from Fintechs. The key role of Fintechs make them technological enablers by improving financial inclusion with access to efficient payment systems in fostering economic growth and development. From Table 1 below, Ghana recorded 32.5 million registered mobile accounts though 44.5% are active recording 5.5 million transactions a day valued to GHc309.3 billion equivalent to USD1.73 billion.

**Table 1. Ghana's Fintech Data**

Mobile Money Data		2019
Registered Mobile Money Account	32,470,703	
Active Mobile Money Account	14,450,752	
Registered Agents	306,345	
Active Agents	226,298	
Total Volume of Transaction	2,009,969,300	5.5 million transaction per day
Total Value of Transaction-Ghana Cedis (GHc million)	309,352	USD1.729 Billion
Balance of Float – GHc million	3,634	USD660.7 million

Source: Bank of Ghana

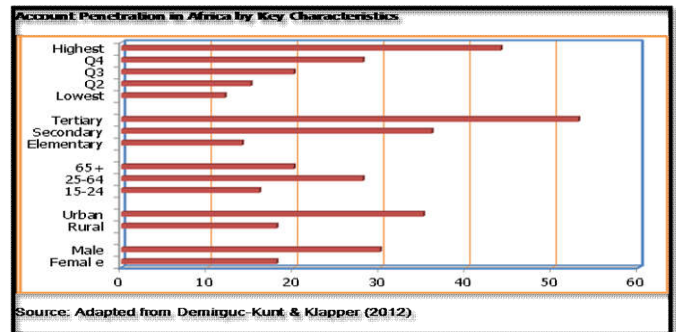


Source: Gambia's Financial Inclusion Strategy

**Figure 7. Financial inclusion Across West Africa**

The Gambia is 31% financially included with high prospects to increase with mobile money 93% of adults and fintech interventions in few years to come to increase inclusion rate to 70% by 2022 as indicated in the country's Maya Declaration. The two MNOs operating in the country – AfriMoney and Qmoney recorded a transaction value of GMD1.39 billion

reaching 925,137 while commercial banks and microfinance institutions reach 783,181 clients mobilising D33.2 billion in June 2019 up from GMD24.6 billion. Accounts have increased rapidly in most countries even in conflict areas of Haiti, Liberia, Mali, Myanmar, among others have registered some respectable inclusion rate. Kenya, South Africa, Ghana, Gabon, Uganda, Tanzania and Zimbabwe also recorded high financial inclusion rate.

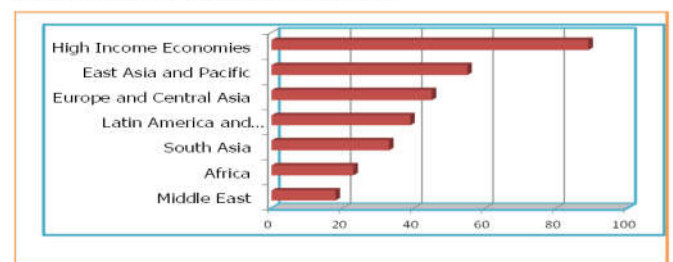


Source: Global Findex Database 2018

**Figure 8. Financial Inclusion Across Income, Education, Age, Sex, Location**

The higher the income level, better educated with tertiary education, youthful, live in urban area and being male, the greater one is financially included as shown in Figure 8. In Figure 9, high income economies and across continents showed varying levels of financial inclusion associated to their level of economic development, level of income, education, infrastructural development and overall human development index. There has been significant but uneven progress toward financial inclusion around the world in recent years as shown in Figure 8 and 9. Some of these steps have been driven by market-friendly policies. Some countries in Asia, such as India and Indonesia, have a long tradition of emphasizing access to finance.

**Global Account Penetration (In Percentage)**



Source: Adapted from Demiguc-Kunt & Klapper (2012)

**Figure 9.**

At the regional level, these policy priorities have paid off; 25 percent of households living on less than \$2 a day now have access to formal or semiformal financial services, compared to 40–50 percent of the population previously. Other success stories include:

- i. Mongolia: a successful turnaround of a state bank increased the number of deposit accounts by over 1.4 million since 2006, now reaching 67 percent of households.
- ii. Philippines: mobile phone banking has expanded to serve up to 7.5 million clients since 2016.

- iii. India: access to credit among the poor is up from 7 percent in 2004 to 25 percent in 2009 and 45% in 2016 as the microfinance sector added 9.9 million clients.
- iv. Bangladesh: 4–6 million new microcredit clients have been added since 2006; financial services have reached about 62 percent of poor households, substantially expanding access to savings.
- v. Vietnam: 2.1 million new microfinance clients have been added since 2006 with fintech applications expanding outreach considerably to over 5 million.

In contrast, India's poor have little access to deposits: "no frills" accounts have increased to over 28 million. Particularly in Asia, the poor are often served by public banks or nonbank entities, including non-governmental organizations (NGOs), with private sector banks playing a smaller role. Key examples of these public banks and non-bank entities include:

- i. Pakistan: Post Savings Bank, with 3.6 million accounts in 2006.
- ii. India: post offices, with 60.8 million savings accounts as of March 2007.
- iii. Bangladesh: Rural Development Board, with 4.7 million active borrowers in 2007.
- iv. Viet Nam: Bank for Agriculture and Rural Development, with 10 million farmer clients in 2007, and Bank for Social Policy, with 6.79 million active borrowers in 2008.
- v. Thailand: Government Savings Bank, with 36 million accounts in 2006.
- vi. Sri Lanka: state banks, which were used by 72 percent households by the end of 2006.

However, despite this outreach, service quality is inferior, and most institutions depend on subsidies. Furthermore, despite remarkable improvements in India and Bangladesh, an estimated 535 million people in these two countries are still excluded from financial services.

Africa faces substantially similar challenges like most of Asia, mostly due to higher incidence of poverty, poor infrastructural development, low income economies associated deprivations, among others. FinScope household surveys that are comparable across countries illustrate this difference for eleven countries. While across Asia, 25 percent of poor households have access to formal financial services, individual countries in Africa rarely demonstrate such a level of household access. In Africa, Kenya has pioneered an interesting process of financial inclusion through leapfrogging to mobile phone payment solutions. Within three years only, the Kenyan telecommunications provider - Safaricom has attracted 7.9 million subscribers to its short message service-based transfer scheme, with significant positive impacts on users. Latin America is home to some of the best regulatory environments for microfinance, such as Peru, Brazil, Colombia and Bolivia. In these two countries, rapid growth over the past seven years has included 6 million clients in the formal financial system, (cgap, 2012) In this regard, two new policy tools stood out:

Firstly, Brazilian policymakers achieved universal coverage of over 5,500 municipalities by enabling banks to use retail agents through technology-based financial services. This new low-cost delivery channel triggered a massive expansion of formal financial services to 12 million clients in only six years. Other countries, such as Colombia and Peru, are replicating

this model and have since registered successes. Secondly, Latin America has also demonstrated the potential of conditional cash transfers into simplified bank accounts as a way to connect beneficiaries to formal finance while simultaneously lowering delivery costs to the government. Transfer challenges motivated the use of agents in Brazil. In Mexico, beneficiaries increased savings and investment, and more than 90 percent of households started to use banking services. Despite these impressive achievements, 1.7 billion of the world's population is still without access to savings accounts, insurance, and other financial services, and about 90 percent of the unbanked are in developing countries with majority being women.

### Financial Inclusion Positive Impact On Financial Stability

There are three main ways in which greater financial inclusion can contribute positively to financial stability -

- i. Greater diversification of bank assets as a result of increased lending to smaller enterprises could reduce the overall riskiness of a bank's loan portfolio<sup>8</sup>. This would both reduce the relative size of any single borrower in the overall portfolio and reduce its volatility.
- ii. Increasing the number of small savers would increase both the size and stability of the deposit base, reducing banks' dependence on "non-core" financing, which tends to be more volatile during a crisis.
- iii. Greater financial inclusion could also contribute to a better transmission of monetary policy, also contributing to greater financial and economic stability (Khan 2011). Any policy forecast becomes quite representative of the total outcome hence, accurate estimate and reliable data from economic growth projections.

Hannig & Jansen (2010) argued that low-income groups are relatively immune to economic cycles, so that including them in the financial sector will tend to raise the stability of the deposit and loan portfolios. Prasad (2010) also observed that lack of adequate access to credit for MSMEs and entrepreneurs has adverse effects on overall employment growth since these enterprises tend to be much more labour intensive in their operations. Today, smartphones are used by more than half the world population. By December 2020, this number will reach 6.1 billion, (World Bank 2019). Mobile-based digital technology presents a huge opportunity to enhance financial inclusion for the 1.7 billion individuals and 200 million MSMEs in developing economies that still lack access to basic savings and credit services. In Malaysia, while 92% of adults have a basic bank account, the financing gap for MSMEs remain high. In Malaysia, even those who have access to financial services often pay high fees for a relatively limited range of financial offerings. At the Global Seminar on Fintech held in Kuala Lumpur from February 24-28, 2020, jointly organized by the World Bank Group and Bank Negara Malaysia brought together more than 35 experts from financial service providers, tech companies and leaders in financial inclusion attended to reflect on achievements of populations' access to finance in the last four decades, and to develop a better understanding of how banks and other financial Institutions can be part of a digital financial system that is evolving through technology. The key takeaways from the seminar included the following:

<sup>8</sup> Reduce level of loan concentration

**Customer centricity:** Digital technology and data allow financial service providers to more effectively serve the financially excluded with a “customer-centric” approach. Using specialized algorithms, providers can analyze information on a customer’s mobile telephone (frequency and amount of airtime top-up) and non-traditional data (social media profiles) to develop the credit profile of a client to assist in making lending decisions.

**Reducing operational risk:** The use of digital channels can mitigate cash risk and increase operational efficiency as opposed to the current traditional lending models based on cash-intensive which incurs additional costs. Through digital technology, clients have the flexibility to repay loans through their mobile phones, avoiding the risks of cash-in-transit.

**New business models:** Mobile banking supports new business models through mobile technology and data analysis in credit scoring, underwriting and decision-making processes. However, implementation has been led by mobile network operators, and to some extent large commercial banks and a small number of new cashless non-bank financial institutions. Additionally, crowdfunding can improve access to finance for unserved and underserved borrowers which creates cheaper, community-based financial products, and facilitates access to digital investments for people with limited options to receive financial returns on their savings.

**Partnerships and collaboration:** There is a need for a range of different financial service providers, be it banks and non-banks (telecommunications companies or fintechs). Just like Uber and Airbnb, which transformed the transportation and hotel industries, innovation in algorithm-based credit risk assessment, psychometrics testing and crowdfunding platforms are bound to change the financial services industry.

**Building trust:** Fintechs face similar challenges in building trust around new digital financial services and ensuring reliable and stable service delivery takes time. This is often limited by poor telecommunications and energy infrastructure, especially in remote areas. Financial service providers should establish communication channels and complaint resolution mechanisms to address customers’ risk perceptions.

**Consumer protection:** Clients of new digital technologies face new risks ranging from poor customer recourse mechanisms, fraud, data privacy and security breach, service unavailability, hidden fees, discrimination, insolvency to unauthorized adverts. It will be critical for financial service providers to meet user expectations in order to expand their financial inclusion frontier. Digital technology has emerged as an important driver of innovation, competitiveness and growth in financial system. By leveraging the ubiquitous growth of mobile phones, digitization can reduce costs, increase efficiency and allow financial service providers to reach new clients and meet their financing requirements sustainability. By developing an inclusive and sustainable digital financial ecosystem through substantial investment, skilled human resources, adequate infrastructure, agile processes, and a conducive regulatory environment, it can foster more widespread adoption and usage thereby boost financial inclusion and the benefits accrued.

**Fintech Disruption of Financial system:** Despite the positives of fintech in Section 4 above, it accurate that all that

glitters are not gold, meaning fintech does have disruptive effect on the financial services industry. The purpose of the paper is to investigate how financial services industry participants perceive the effect of digital disruption as well as to explore what strategies are being adopted by incumbents in the face of potential disruption from fintech challengers. Based on the review and an exploratory study on the financial ecosystem in many developing countries the findings showed that the fintech sector is still nascent in many jurisdictions with low capabilities, hence can be disruptive in selected product and customer segments. Multiple regulatory, structural, and cultural obstacles stand in the way of fintech adoption, see Figure 4. The preferred strategy to face the future disruption is the bank-fintech collaboration, which will create new value for ecosystem partners and speed up innovation. Our study adds useful insights to the body of knowledge related to disruptive innovations in general and fintech in emerging and developing markets, in particular. It is our belief that partnering can be explained in the light of the distinctive characteristics of the digital economy. A framework is proposed to create a financial services platform embedded in a broader ecosystem to facilitate the bank-fintech collaboration.

However, some of the greatest challenges of Fintechs are that they have created a regulatory arbitrage in many countries as they are yet to be fully regulated under the existing regulatory framework. The dynamic nature of technology makes it even more complex for Central Banks to enforce effective monitoring and regulation. In addition to this, the threats of cyber security continue to pose a greater risk to innovative solutions by Fintechs for financial inclusion. The financial industry, and especially the banking sector, is heavily regulated because of its role as a key infrastructure of market economies. Disruptions in the supply of financial services can have huge consequences in terms of losses and socio-economic impact as witnessed by the long history of financial crises – Asian and Global financial crises of 1997/8 and 2008 respectively through regulatory forbearance and compromise lending standards. In many circumstances, financial innovation triggers widespread instability, which is why in academic research the balance between costs and benefits of competition in the industry is still an open issue (Thakor, 2011).

**Financial Inclusion Negative Impact On Financial Stability:** There are number of ways in which increased financial inclusion could contribute negatively to financial stability, if the right steps are not followed also (see Khan 2011).

- i. The most obvious example is an over --anxious attempt to expand the pool of borrowers’ volumes and value with a reduction in lending standards. This was a major contributor to the severity of the “sub-prime” crisis in the United States in 2008 financial crisis associated with poor underwriting and excessive lending with the objective of increasing outreach and increase loan portfolio.
- ii. Commercial banks and other financial institutions such as fintechs and other illegal fintechs could increase their reputational risk if they outsource various functions such as credit risk management in order to reach smaller borrowers. Key roles of financial institutions are not allowed to be outsourced such as risk management. Many Central Banks have expressed concerns over the level of outsourcing to control similar risks. Also, in developing countries, credit risk scor could not adequately capture all

the attributes of MSMEs as most operations are not formally recorded. A blend of client centric information and formal documentation would make a considerable difference in credit decision-making.

- iii. Key disruptive impact on financial system is that the poor regulation of financial institutions, an increase in lending to the vast customer base could dilute the overall effectiveness of regulation in the economy and increase financial system risks with its adverse consequences.



Figure 10. Risks to Fintech

Fintech poses a greater risks to the financial industry as shown in Figure 10 above ranging from Financial Security, Cyber Security, Consumer Protection and Data Protection. With weak IT infrastructure, the system is expose to all these four menaces culminating into shorting down systems and collapse of operations. The crisis of the 1990s with the Tequila Effect (1994), the Asian financial crisis (1997) and the global financial crisis of 2008 have highlighted the immense value of financial stability and motivated a review of the policy tools available to prevent costly breakdowns of the financial system. With financial inclusion gained a much higher profile as a policy goal in recent years, it is important to enquire to what extent there are trade-offs between the objectives of maintaining systemic financial stability and financial inclusion. Of particular concern in many developing countries is the additional regulatory uncertainty arising from the rapidly proliferating, technology-driven policy solutions that boost small-scale transactions flowing through the national payment system.

**The Global Financial Crisis of 2008:** The financial crisis of 2008 had indeed hit the global economy hard with considerable loss of trillions of USDollars, jobs and the associated adverse effects on economies for long. The crisis was largely explained by over-indebtedness of customers through digital credit. However, lessons learned suggest that past financial crises have frequently bypassed the highly localized markets at the bottom of the pyramid: the microfinance segment of Bank Rakyat Indonesia remained rock solid throughout the Indonesian crisis, and anecdotal evidence suggests that financial institutions catering to the lower end tend to weather macro-crises well and help sustain local economic activity. Could it even be possible that a more diversified aggregate financial sector balance sheet, spread over a broader variety of economic agents, might contribute to a more resilient economy that follows a higher growth path?, The President of the European Central Bank, Jean Claude

Trichet did agreed, declaring that financial stability is made up of three factors: *‘the amount and quality of information available to players, the adequacy-inadequacy of the frameworks for crisis prevention and resolution, and the level of completeness of the market’*.

Yet another crucial disruptive effect in the increasingnumber of illegal Fintechs that have created havoc on clients with a resultant loss of their deposits, transfers and created crucial reputational risks to the entire fintech industry and by extension the financial sector in general. Customers have lost their life savings to these illegal fintechs, forcing many to stick to traditional banking with all its limitations. Due to aggressive marketing, over-indebtedness and aggressive loan collection methods, customers have suffered dearly in the hands of unscrupulous fintech actors. Many have committed suicides in Andhra Pradesh, India, eating less and sleeping less thinking of the next instalment payments. These had cost lives, loss of dignity and pride in the communities, discriminations, among others. Fintech that promises to better lives by unrestricted access to finance in a sustainable, affordable and safe manner ended up apparently ending peoples’ lives. however, Jaabi (2014) resolved that *Fintech like Microfinance is not a universal magic bullet to eradicate poverty but like anything less, it must be managed with care accordingly with responsible appraisal, lending, monitoring and recovery process if it is to live the test of time*. It is important to consider how financial inclusion cushioning crisis impact at the domestic level. An oft-cited feature of past crises, particularly the Asian financial crisis, has been the stability and growth of financial institutions catering for the poor amid the turmoil that toppled internationally exposed corporate lenders. As a result, local economic activities could continue, at least to some extent, recover more quickly.

**Shortcomings and Obstacles of Fintechs:** Although mobile money account growth and penetrationhave seen impressive overall growth, this growth has beendisproportionately among developed and developing countries, high income and low-income, men and women, urban and rural communities. In2016, GSMA found a 19.5 percent gender gap in mobilemoney account ownership in Sub-Saharan Africa. In 2017,it reported that just over a third (36 percent) of mobile money users were women. Rural penetration remainsa major challenge, hence the benefits are highly erratic. According to GSMA, in 2017, mobilemoney providers in predominantly rural markets capturedonly 22 percent of the addressable market. Similarly,most recent Financial Inclusion Insights surveys fromAfrica show persistent gaps in mobile account registrationpenetration in rural versus urban areas: in Benin (6 percentvs. 18 percent), Ghana (18 percent vs. 23 percent), Kenya(69 percent vs. 81 percent), Rwanda (18 percent vs.46 percent), Tanzania (48 percent vs. 72 percent), andUganda (40 percent vs. 63 percent). Additional effortsare needed by all DFS stakeholders to drive uptake among ‘hard-to-reach’ populations. Equally important is stimulating the use of a full rangeof digital financial products. In 2017, GSMA found thatonly about a third of accounts in Sub-Saharan Africa(121.9 million) were 90-day active in 2017. In 2015,it reported that the majority of digital accounts remainempty with the bulk of funds simply passing through,even when regulators have mandated that interest bepaid on digital balances. These are both signs that DFSproducts could be refined to better meet user needs.Product design, consumer (digital) literacy, financialeducation, awareness, trust, connectivity, distribution

infrastructure and enabling regulations, all affect the uptake and active use of DFS products. For instance, operational challenges and transaction fees create barriers to the uptake of merchant payments. Significant policy (KYC, data privacy, traceability of funds), contextual (infrastructure, recipient literacy) and operational (system integration, aggregator capacity and sustainability, agent/merchant fraud, interoperability) challenges continue to hinder widespread adoption of bulk disbursements. Inconvenient illiquidity features, limited use cases for digital balances, lack of interoperability, unintuitive product design at odds with traditional money management practices, psychological barriers to savings, and lack of trust or information restrict the digital savings behaviour of low-income DFS customers. Exclusion of most vulnerable groups (remote, illiterate, phoneless, gender) includes the following

- i. Discrimination against traditionally underserved groups, scoring algorithms mirroring historical biases
- ii. Lack of interoperability among Mobile Network Operators - MNOs
- iii. Financial integrity: AML/CFT compliance or insufficient Customer Due Diligence, Know Your Customer and Know Your Customer's Customers (KYC, KYCC)
- iv. Inability to access funds when system is down,
- v. Loss of funds held by non-prudentially regulated providers – illegal Fintech Companies which many poor clients will find it difficult to distinguish,
- vi. Inadequate product disclosure of fees, terms and conditions
- vii. Unethical practices (aggressive marketing, over-indebtedness, abuse, aggressive loan collection methods)
- viii. Loss of confidentiality, account hacking, data theft – customer protection issues
- ix. Mistaken transactions due to low digital financial literacy – illiteracy and limited skills to best utilise the potentials provided by Fintech platforms
- x. Vulnerability to phishing schemes, social engineering scams, hackings
- xi. Insufficient agent liquidity and agent fraud are prevalent
- xii. Crowdfunding risks (adverse selection, inadequate information, inexperienced funders, technology failure, cyber risks, lack of due diligence)
- xiii. Inability to accommodate new providers into existing regulatory frameworks
- xiv. Failure to effectively regulate and supervise rapidly evolving digital financial landscape
- xv. Fintech is open to excessive risks of cybersecurity issues, adequate measures must be put in place prior to take off of digital finance operations.

Summing up, digital technologies are potentially disruptive of the industrial organisation of the financial industry because they impact on the market frictions that give a comparative advantage to intermediaries like banks. The promise of cost saving to be translated to consumers is huge. There is however large uncertainty on who will deliver the promise and how. Finally, if on the one hand digital technologies open traditional markets to the competition of new entrants, on the other they also offer unprecedented tools for customising product and services and extracting consumer surplus through price discrimination. In summary, financial inclusion introduces new lines of business with idiosyncratic risk profiles that can be appropriately regulated and supervised. The contribution to systemic risk is likely to be rather low with greater financial inclusion, especially relative to consumer protection and

reputational risk considerations. Especially with respect to technology-based financial inclusion policies, such as mobile phone banking, regulatory concerns have focused on financial integrity rather than stability through FATF policy frameworks to combat money laundering and terrorist financing. The implementation of FATF standards requires a risk-based approach similar to that required for regulation and supervision of financial institutions serving low-income clients. It has a direct impact on financial inclusion because customer due diligence through restrictive know-your-customer rules may limit outreach potential. However, with all the disruptions fintechs may be exposed around the globe, they remain relevant to boost economic growth, particularly when managed appropriately. As shown in Figure 11, the key building blocks remain crucial to the successes of fintech in global financial inclusion drive. The key role of Government in providing the required IT infrastructural development, building and required integrated information system, stakeholders engagement (Network Cohesion) and aligning and coordinating financing arrangements are crucial for fintech companies to boost financial inclusion globally with all its associated benefits at micro and macro-economic effects.



Source: Alliance for financial Inclusion, 2020

**Figure 11. Key Building Blocks**

FinTech is leading to rapid innovations in the financial services industry. These innovations can enhance financial inclusion by broadening financial access "at scale" and improving the affordability and quality of financial services through "efficiency". Fintech transformative solutions aim at accelerating access and usage of financial services with special focus on closing of the gender gap, management of climate change risks, the mitigation of de-risking challenges, the inclusion of forcibly displaced persons in conflict affected areas, reducing the financing gap for the MSMEs, and lowering costs for cross-border remittances along with promotion financial stability and integrity.

Stakeholders also identified ways in which we can strengthen peer learning and knowledge sharing with an aim to develop regulatory and policy interventions to balance innovations and oversight, benefits and associated risks in financial inclusion drive. At the same time, leveraging fintech for financial inclusion creates new regulatory challenges and poses cybersecurity, data privacy, money laundering and consumer protection related risks. As shown in Figure 12, fintech solutions stand to address key issues as captured therein – digital KYC, block chains, biometric identities, crowdfunding, mobile money and wallets, remittances, among others.



Source: AFI Souchi Accord (2018)

**Figure 12. Fintech Transformational Solutions**

## Conclusions

Fintech, no doubt, remains crucial in boosting financial inclusion around the globe – not only financial access but in health, education, trade, agriculture and other crucial sectors. Despite its risks of being abuse, increase clients' indebtedness, exploitation and risks of financial crisis, fintech has been successful in many jurisdictions of increasing financial access to savings, payment systems, digital credit, micro insurance, among others. As the Director of the G-24 Secretariat Marilou Uy highlighted, "The key issue at hand is "how to" realize the potential of the FinTech promise for financial inclusion, while finding the right balance between creating a supportive space for innovation and maintaining a robust and appropriate regulatory framework to safeguard financial stability and protect consumers." Successfully leveraging fintech in the service of financial inclusion will require dialogue and peer learning to explore successful policy models for balancing the opportunities provided with the objectives of consumer protection, financial stability and financial integrity, We need to now work together to identify and implement technological solutions which can address some of the most problematic financial inclusion challenges, such as de-risking, closing the financial inclusion gender gap, crowdfunding to increase MSMEs financing and the financial inclusion of vulnerable and conflict affected communities.

## REFERENCES

- Ayyagari, M., Beck, T., & Demircug-Kunt, A. (2003). Small and Medium Enterprises across the Globe: A new Database. *World Bank Policy Working Paper 3127*.
- Beck, T., & Demircug-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking and Finance, 30*, 2931-2943.
- Beck, T., & Demircug-Kunt, A. (2008). Access to finance: An Unfinished Agenda. *World Bank Economic Review, 22*(3).
- Beck, T., Demircug-Kunt, A., & Maksimovic, V. (2004). The determinants of financing obstacles. *World Bank Policy Research Working Paper 3204*.
- Beck, T., Demircug-Kunt, A., & Maksimovic, V. (2005). Financial and Legal Constraints of Firm Growth: Does Firm Size Matter? *Finance, 60*, 137-177.
- Beck, T., Demircug-Kunt, A., & Paria, M. S. M. (2008). Banking financing for SMEs around the world: Drivers, Obstacles, Business Models and Lending Practices. *World Bank Policy Research Working Paper 4785*.
- Beck, T., Demircug-Kunt, A., Laeven, L., & Levine, R. (2004a). Finance, firm size and growth: World Bank Mimeo.
- Berger, A., & Udell, L. (2011). Bank Size, Lending Technologies and Small Business Finance. *Banking and Finance, 35*, 724 - 735.
- Demircug-Kunt, A., Love, I., & Maksimovic, V. (2006). Business environment and the incorporation decisions. *Journal of Banking and Finance*.
- Djankov, S., McLiesh, C., & Shleifer, A. (2007). Private Credit in 129 Countries. *Journal of Financial Economics, 84*(299).
- Fafchamps, M. (1994). *Enterprise Finance in Kenya: Regional program on Enterprise Development, Africa Region: World Bank*.
- Fatoki, O. O., & Smit, V. A. (2011). Constraints to credit access by new SMEs in South Africa: A supply-side analysis. *African Journal of Business Management, 5*(4), 1413 - 1425.
- Guiso, L., Sapienza, P., & Zingales, L. (2004). Does Local Financial Development Matter?\*. *Quarterly Journal of Economics, 119*(3), 929-969. doi: 10.1162/0033553041502162
- Levine, R. (1997). Financial development and economic growth: Views and Agenda. *Economic Literature, 35*, 688-726.
- Liedholm, C., & Mead, D. C. (1999). *Small Enterprises and Economic Development. The dynamics of Micro and Small Enterprises*. London.
- Love, I. (2003). Financial development and financing constraints: International Evidence from the structural model. *Review of financial studies, 16*(3), 765-791.
- Myers, S. (1984). The capital structure puzzle. *Journal of Finance, 39*(3), 575-592.
- Myers, S., & Majluf, N. (1984). Corporate finance and investment decision when firms have information that investors do not have. *Journal of Financial Economics, 13*(2), 187-221.
- Robb, A. M. (2002). Small business financing: Differences between young and old firms. *Journal of Entrepreneurial Finance and Business Ventures, 7*, 45-65.
- Rocca, M. L., Rocca, T. L., & Cariola, A. (2009). Small Business Financing: Financial preferences throughout the life cycle of a firm. *University of Calabria, Italy*.
- Rogers, M., & Pontius, B. (2009). *Uganda's Supply-Side Constraints and Performance of Exportable Products in the Global Market*. Makerere University Business School, Uganda. Kampala.
- Schiffer, M., & Weder, B. (2001). Firm size and the business environment: Worldwide survey results. *IFC Discussion Paper, Washington D C, 43*.
- Seuwaegen, & Goedhuys, (2002). Growth of firms in developing countries: Evidence from Cote D'Ivoire. *Development Economics, 68*, 117-135.

- Stiglitz, J., & Weiss, A. (1981). Credit Rationing in Markets with imperfect Information. *The American Economic Review*, 71(393).
- UNCTAD. (2006). Supply-Side Constraints on the trade performance of African Countries *Trade Capacity Building Background Paper*.
- Wijst, N. V. d., & Thurik, R. (1993). Determinants of small firm debt ratios: An analysis of retail panel data. *Small Business Economics*, 5(1), 55-65.
- Zingales, L., Sapienza, P., & Guiso, L. (2004). Does local financial development matter? *Quarterly Journal of Economics*, 3, 929-969.

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