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FINANCIAL INCLUSION AND FINANCIAL STABILITY NEXUS: ARE THEY SYNERGIES OR TRADE-OFFS

***Dr. Seeku A K Jaabi**

First Deputy Governor, Central Bank of The Gambia, Lecturer, Chartered Institute of Bankers – The Gambia

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ABSTRACT

The recent financial crisis has shown that financial innovation can have devastating systemic impacts on financial stability, an example of the sub-prime crisis in the United States. International financial standards and national regulators' response have been a global concerted effort to overhaul and tighten financial regulations. However, at a time of designing stricter regulations, it is crucial to avoid a backlash against expanding the financial access frontier with a compromise on the effectiveness of lending standards. In this study, it is argued that greater financial inclusion presents opportunities to enhance financial stability. The arguments are based on the following insights:

- Financial inclusion poses risks at the institutional level, but these are hardly systemic in nature. Evidence suggests that low-income savers and borrowers tend to maintain solid financial behaviour throughout financial crises, keeping deposits in a safe place and paying back their loans.
- Institutional risk profiles at the bottom end of the financial market are characterized by large numbers of vulnerable clients who own limited balances and transact small volumes. Although this may raise some concerns regarding reputational risks for regulators and consumer protection agencies, in terms of financial instability, the risk posed by inclusive policies is negligible.
- In addition, greater financial inclusion could also contribute to better transmission of n=monetary policy as data become more representative thus contributing to greater financial stability
- However, with poor financial regulation and weak outsourcing of key functions such as credit risk management with the objective of expanding the financial access frontier, can have a devastating effect on financial stability.

In this study, we evaluate the current state of financial inclusion globally across the developing world, explore trends in financial inclusion and examine the most effective policies boosting financial stability. The paper arges that innovations aimed at countering financial exclusion may help strengthen and broaden financial systems. However, analysis of synergies and trade-offs between financial inclusion and financial stability remain an extensive debate in the financial literature. However, this study found out that provision of skills training, safety nets, financial education, income generating activities, financial linkages, adopting innovation and technology in financial delivery, among others can to a large extent inspire positivity of financial inclusion on financial stability, thus building synergies of achieving double objectives.

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INTRODUCTION

Much research focused on the importance of financial inclusion on poverty reduction, enterprise growth and economic development (Robin & Vogel, 2005; Ludwig 2008; Robinson 2001; Pande & Burgess, 2005; Otero &Rhyne, 1994; Maya 2009; Jaabi 2015, 2016) with limited coverage on assessing financial inclusion and financial stability nexus. Are they synergies or a trade-off? This paper attempts to fill the gap by addressing such a topical issue in development economic discourse. In recent years, financial stability issues

have been receiving priority attention from policy makers around the world. One main catalyst for this trend was the East Asian financial crisis of the late 1990s and the global financial crisis of 2008/9. Following that turmoil, the World Bank and the International Monetary Fund (IMF) introduced the Financial Sector Assessment Program (FSAP) in 1999, aimed at assessing regularly the strengths and weaknesses of financial systems in member countries. Well aware of the fiscal, economic and social costs of financial crises, many of these international financial institutions (including the Basel Committee) have devoted large amounts of time and energy to developing various International Standards and Codes, which are essentially compilations of best practices in different areas related to the objective of fostering financial stability. A substantial portion of these efforts has been directed towards reinforcing different aspects of financial sector infrastructure (for example. legal framework, financial supervision, accounting, auditing and financial reporting). At the country level, many central banks and other regulatory authorities have also taken financial stability more seriously, establishing Financial Stability Departments and introducing the regular publication of Financial Stability Reports, focused on assessing potential risks to financial stability (see Cihak, 2006 and Oosterloo, *et al*, 2007). Despite this increased focus on financial stability issues, it is notable that a widely accepted definition of "financial stability" does not exist and the concept has generated a fair amount of debate among academics, market participants and policy makers. Within this context, this paper contributes to the search for a useful definition of financial stability by first reviewing the existing literature on the subject.

On the other hand, financial inclusion aims at drawing the "unbanked" population into the formal financial system so that they have the opportunity to access financial services ranging from savings, payments, and transfers to credit and insurance. Financial inclusion neither implies that everybody should make use of the supply, nor that providers should disregard risks and other costs when deciding to offer services (Christen, Robert Peck, Timothy R. Lyman, & Richard Rosenberg. 2003). Both voluntary exclusion and unfavourable risk-return characteristics may preclude an enterprise or household, despite unrestrained access, from using one or more of the services. These outcomes do not necessarily warrant policy intervention, rather, policy initiatives should aim to correct market failures and try to eliminate non-market barriers to accessing a broad range of financial services. Despite the considerable progress made by microfinance institutions, credit unions, and savings and credit cooperatives over the last several decades, the majority of the world's poor remain unserved and underserved by formal financial intermediaries that can safely manage cash and intermediate between net savers and net borrowers. According to the Consultative Group to Assist the Poor (CGAP), the absolute number of savings accounts worldwide is reported to exceed the global population, yet half of the world's adult population (2.5 billion people) does not have access to savings accounts and other formal financial services including credit.

Financial inclusion as a policy objective represents the current consensus in a long-standing debate on the contribution of finance to economic development and poverty reduction. It reflects the evolution of financial sector policies in developing countries over the past decades, and embodies important insights into the positive impact that financial services have on the economic lives of the poor (Chaia *et al*. 2009). Financial sector policies have evolved through three stylized stages over the years: first, fostering state-led industrial and agricultural development through directed credit; second, market-led development through liberalization and deregulation; and third, institution building that aims at balancing market and government failures undermining domestic resource mobilization. Up till the 1980s, many developing countries channeled public funds to target groups like farmers and small enterprises, and regulated the scope of activities for managing these funds. These "directed credit" programs assumed that the rural poor were unable to save or to afford market rates of interest, and therefore need loans at subsidized rates to build capital. Hence development banks lent at below-market rates to selected target groups. However, over the years, these approaches turned detrimental to the financial sector as it proved unsustainable. The results of "financial repression" were typically shallow financial systems and institutions that had little capacity to allocate resources efficiently according to risk-return characteristics. In addition, poor targeting yielded transfers through highly repressive subsidized interest rates, and subsidies weakened financial institution performance. Not only did these programs typically prove to be unsustainable, they also did not improve outreach of financial services to the poor, particularly in rural areas.

At the end of the 1980s, a new approach emerged that focused on the performance of financial institutions in delivering their services to segments of the population with little or no access to finance. The changes were substantial: the new approach shifted the discussion away from individual firms and households onto institutions and their ability to provide services on a sustainable and widespread basis, in particular leveraging technology to boost financial access. Initial experiences in Indonesia, Bangladesh, Bolivia, Kenya, India and some other countries demonstrated that microfinance conceived as "banking with the poor" are indeed financially viable and may thus increase outreach on a sustainable basis. These encouraging examples led to a new view called the "financial system" paradigm (Robinson, 2001; Otero and Rhyne, 1994). Over the past few years, microfinance has undergone a rapid transformation as its links to the formal financial system have been expanded. Growing theoretical and empirical evidence suggests that financial systems that serve low-income people promote pro-poor growth (Beck, Demirgüç-Kunt, & Maksimovic 2004). Lack of access to finance, therefore, adversely affects growth and poverty alleviation. It makes it more difficult for the poor to accumulate savings and build assets to protect against risks, as well as to invest in income-generating projects. As a result, the interest in financial sector development has increasingly focused on the factors that determine not only the depth but also breadth of access, in a move toward inclusive financial systems (Otero and Rhyne 1994). With this increased attention to financial inclusion for poverty alleviation, policy objectives are being constantly expanded to include more quality access to a wider range of financial services. (Morduch 1999; Robinson 2001). This trend has been facilitated by the development and rapid diffusion of information and communication technology that dramatically reduces the cost of connecting users to formal financial institutions through payment systems, with potential spillovers into a broader range of services (Demirgüç-Kunt, Beck, & Honohan, 2008; United Nations Capital Development Fund (UNCDF) 2006). Against this background, financial services to the unbanked have

become a major area of interest for policymakers, practitioners, and academics who increasingly emphasize financial inclusion as a policy objective. The notion of building inclusive financial systems recognizes not only the goal of incorporating as many poor and previously excluded people as possible into the formal financial system, but it also assigns to mainstream financial institutions the role of reaching out to the unbanked (UNCDF, 2006). From this perspective, microfinance is now seen as an integral part of an inclusive financial system. As a result, financial inclusion has become an important policy goal that complements the traditional pillars of monetary and financial stability, as well as other regulatory objectives such as consumer protection. Policies to encourage increased access for the previously unbanked must, however, take into consideration the objectives of financial stability, especially in light of the current economic and financial crisis. (Hawkins 2006; IMF 2012, CGAP 2009).

All these policy changes were possible because at the micro-level, views on household behaviour with respect to financial services have changed dramatically. Today, it is understood that poor households rely on a variety of financial instruments in the daily management of their cash flows and risks, and in their endeavours to build assets through saving. The average income at the international poverty line of $2 a day translates in practice into a highly variable flow that requires active management to smooth consumption and reduce vulnerability to various shocks, such as health risks, as well as to cope with major life cycle challenges. This paper is divided into many parts, commencing with an introductory chapter followed by literature review covering definitions of financial inclusion and financial stability. The rest of the study include financial inclusion trends, relationship between financial inclusion and poverty reduction, macro and micro economic effects, financial inclusion policies, financial inclusion and financial stability nexus, synergies and trade-offs between financial inclusion and financial stability. The final section presents the conclusions and recommendations.

Literature Review

This section reviews definitions of financial inclusion and financial stability, reviews financial inclusion trends and its measurement.

Definition of financial inclusion and financial stability[1]

There is no universal definition of financial stability and financial inclusion. A number of definitions will be shared in this paper. Past studies hardly cover financial inclusion and financial stability nexus. Are they reinforcing each other or are they trade-offs? This paper attempts to address this gap as a key contribution to economic theory and literature. As defined by European Central Bank, "financial stability is a condition in which the financial system—comprising of financial intermediaries, markets and market infrastructures—is capable of withstanding shocks, thereby reducing the likelihood of disruptions in the financial intermediation process which are severe enough to significantly impair the allocation of savings to profitable investment opportunities." (ECB 2012). A more theoretical definition put forward by Schinasi (2004:8) as " a financial system in a range of stability whenever it is capable of facilitating (rather than impeding) the performance of an economy *and of dissipating financial imbalances that arise endogenously or as a result of significant adverse and unanticipated events*''. This statement is unique in viewing financial stability as a continuum, rather than a single, static condition (*ibid*, p. 6). This implies that financial systems operate within a corridor, with stability and instability at opposite ends. Movements towards the "unstable" end of the corridor could then be due to an accumulation of imbalances (or vulnerabilities) within the financial system or because of exogenous shocks. In other words, Schinasi pointed out that instability should refer to cases where the financial system impedes the normal functioning of the real economy.

Crockett (2008) expresses financial stability as requiring *"that the key institutions in the financial system are stable, in that there is a high degree of confidence that they continue to meet their contractual obligations without interruption; and that the key markets are stable, in that participants can confidently transact in them at prices that reflect the fundamental forces and do not vary substantially over short periods when there have been no changes in the fundamentals"*. Implicitly, this definition takes account of the condition of financial intermediaries and markets, but not financial infrastructure. Also, in contrast to some other writers (e.g. Davis 2001 and Allen and Wood, 2006), the statement considers periods of asset price volatility as evidence of instability. Finally, it contends that financial stability exists if the financial system can continue to function normally *without* "outside assistance". Hence, it excludes situations where financial instability is only avoided through the provision of financial or other kinds of support to financial institutions by the regulatory or political authorities.

Meanwhile, states that *"financial instability occurs when shocks in the financial system interfere with information flow so that the financial system can no longer do its job of channeling funds to those with productive investment opportunities" (*Mishkin, 1999). This definition emphasizes the intermediation role of the financial system in providing credit to the real sector and stresses the central role of asymmetric information in causing financial instability (see also Mishkin, 1997; Mishkin, 2000). Mishkin suggests that financial stability arises when shocks cause disruptions to the flow of information.

It is argued that financial stability could best be understood by considering its absence, i.e. financial instability. Financial instability could be referred to as *"...conditions in financial markets that harm or threaten to harm an economy's performance through their impact on the working of the financial system". ''*Financial instability" encapsulates several different kinds of such instability, ranging from banking crises to stock market crashes. Hence, different forms of instability affect different parts of the financial system and may also differ in their consequences. However, financial instability should be distinguished from other forms of instability such as macroeconomic instability. The primary difference is that financial instability has its immediate source in financial markets (broadly defined) while macroeconomic instability is often due to aggregate demand or supply shocks. Finally, it should be pointed out that financial markets are characterised by constant changes in prices and conditions, all of which would not qualify as financial instability. Therefore, it is

''Financial system stability″ refers to a state in which the financial system functions properly, and participants, such as firms and individuals, have confidence in the system" (Bank of Japan, 2014)

proposed that financial instability should be viewed in terms of the potential impact of changes in financial conditions on the real economy. 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, and transfers to 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''.

Measuring financial inclusion

Reliable and comprehensive data that capture various dimensions of financial inclusion are a critical condition for evidence-based policymaking. This includes the definition of consistent financial inclusion indicators that not only may set a clear direction for policymaking by translating the concept of financial inclusion into operational terms but also may allow tracking progress and measuring outcomes of policy reforms. Measuring financial inclusion presents several challenges, though. Thus the definition of financial indicators has traditionally been shaped by previously formulated policy objectives. On other occasions, some indicators may introduce important distortions into the analysis prior to policymaking discussions by prioritizing aggregate volumes over numbers and characteristics of clients.

Broadly speaking, financial inclusion can be measured through the following lenses in order of complexity:

Access: The ability to use available financial services and products from formal institutions. Understanding levels of access may require insight into and analysis of potential barriers to opening and using a bank account for any purpose, such as cost and physical proximity of bank service points (for example, branches and ATMs). A very basic proxy for access can be derived by counting the number of open accounts across financial institutions and estimating the proportion of the population with an account.

Quality: the relevance of the financial service or product to the lifestyle needs of the consumer. Quality encompasses the experience of the consumer, demonstrated in attitudes and opinions toward those products that are currently available to them. The measure of quality therefore would be used to gauge the nature and depth of the relationship between the financial service provider and the consumer as well as the choices available and consumers' levels of understanding of those choices and their implications.

Usage: beyond the basic adoption of banking services, usage focuses more on the permanence and depth of financial service and product use. Hence determining usage requires more details about the regularity, frequency, and duration of use over time. To measure usage, it is critical that information reflect the user's point of view, that is, data gathered through a demand-side survey.

Impact: measuring changes in the lives of consumers that can be attributed to the usage of a financial device or service poses serious methodological challenges to survey design.

This information can be sourced either from the demand side - at the individual, household, or firm level, or from the supply side - at the level of a financial institution, or from a combination of both. With all these elements in mind, it can be stated that measurement of financial inclusion serves two primary objectives that imply different data needs: first, measuring and monitoring levels of financial inclusion, and second, deepening understanding about factors that correlate with financial inclusion and, subsequently, the impact of policies.

Financial Inclusion Trends

There has been significant but uneven progress toward financial inclusion around the world in recent years. 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. 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 as a whole. Other success stories include:

- **Mongolia:** a successful turnaround of a state bank increased the number of deposit accounts by over 1.4 million since 2006, now reaching 62 percent of households.
- **Philippines:** mobile phone banking has expanded to serve up to 4 million clients since 2002.
- **India:** access to credit among the poor is up from 7 percent in 2004 to 20–5 percent in 2009, as the microfinance sector added 9.9 million clients.
- **Bangladesh:** 4–6 million new microcredit clients have been added since 2006; financial services have reached about 55 percent of poor households, substantially expanding access to savings.
- **Viet Nam:** 2.1 million new microfinance clients have been added since 2006.

In contrast, access in People's Republic of China (PRC) appears to have declined since the reforms of the rural cooperatives. Also, 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 nongovernmental organizations (NGOs), with private sector banks playing a smaller role. Key examples of these public banks and nonbank entities include:

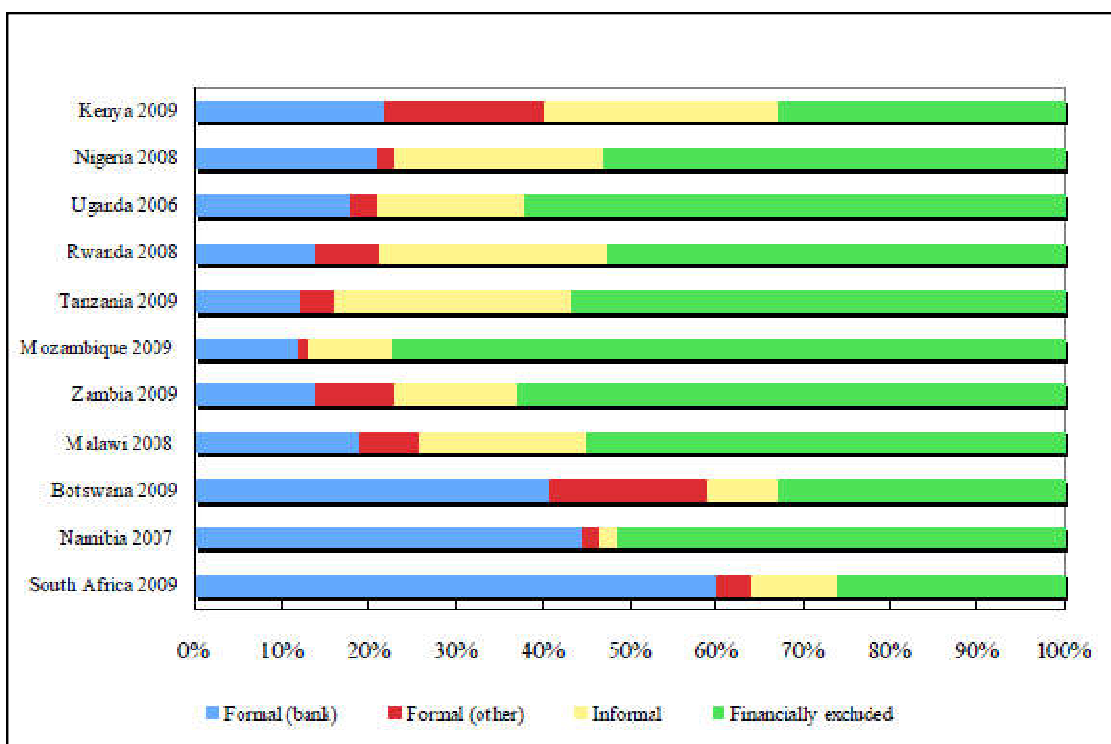
- **Pakistan:** Post Savings Bank, with 3.6 million accounts in 2006.
- **India:** post offices, with 60.8 million savings accounts as of March 2007.
- **Bangladesh:** Rural Development Board, with 4.7 million active borrowers in 2007.
- **Viet Nam:** Bank for Agriculture and Rural Development, with 10 million farmer clients in 2007, and Bank for Social Policy, with 6.79 million active borrowers in 2008.
- **Thailand:** Government Savings Bank, with 36 million accounts in 2006.
- **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, as shown

in Figure 2, despite remarkable improvements in India and Bangladesh, an estimated 535 million people in these two countries are still excluded from financial services. Table 1 shows how countries in Asia and Africa are sorted out by their level of financial inclusion (cgap, 2012). 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

Table 1. Percent of adult population/households financially included

Level of financial inclusion	Countries
High >50%	Thailand, Malaysia, Sri Lanka, Nepal, Mongolia, Bosnia, South Africa, Bostwana
Intermediate 30-49%	India, China, Indonesia, Bangladesh, Viet Nam, Namibia Tanzania, Kenya
Low <30%	Cambodia, Myanmar, Philippines, Papua New Guinea, Pakistan, Laos, Solomon Islands, Samoa, Gambia, Senegal, Uganda, Rwanda,



Sources: Finscope (2009). See www.finscope.co.za

Figure 1. Financial Access across Developing World

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 (Figure 3). 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 only three years, 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 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 stand out:
Firstly, Brazilian policymakers achieved universal coverage of over 5,500 municipalities by enabling banks to use retail agents. This new low-cost delivery channel triggered a massive expansion of formal financial services to 12 million clients in only six years.

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, half of the world's population is still without access to savings accounts, insurance, and other financial services, and about 95 percent of the unbanked are in developing countries.

The Relation between Poverty and Financial Inclusion: Recent Evidence

It is not an easy task to collect reliable financial data particularly in developing countries. A common obstacle is that both current levels and recent progress in financial inclusion vary substantially across countries. Most countries are only beginning to track financial inclusion, so data for projecting longer-term trends are not yet available. In addition, comparing survey results across countries is often difficult because methodologies used often differ from one survey to the next.

CGAP's *Financial Access 2009*, a global survey of regulators with regard to financial access, focuses on individual account

holdings with regulated institutions. Using a statistical model to fill in data gaps, the CGAP survey arrives at an estimate of 2.6 billion unbanked adults in the developing world. Another recent survey by the World Bank's composite access indicator suggests that financial inclusion is an issue well beyond households living on less than $2 a day.

financial services. In this sense, more research is needed to analyze how policy, by making the environment more conducive for the expansion of financial access, plays a role in reducing financial exclusion. This idea is reinforced by Figure 4, which shows the correlation between domestic credit by the banking sector and financial inclusion.

Source: cgap, (2009)

Figure 2. Financial Exclusion Across Countries

Source: Adapted from Hulme & Mosley, 1998

Notes: a. GDP per capita based on 2003–07 average purchasing power parity.

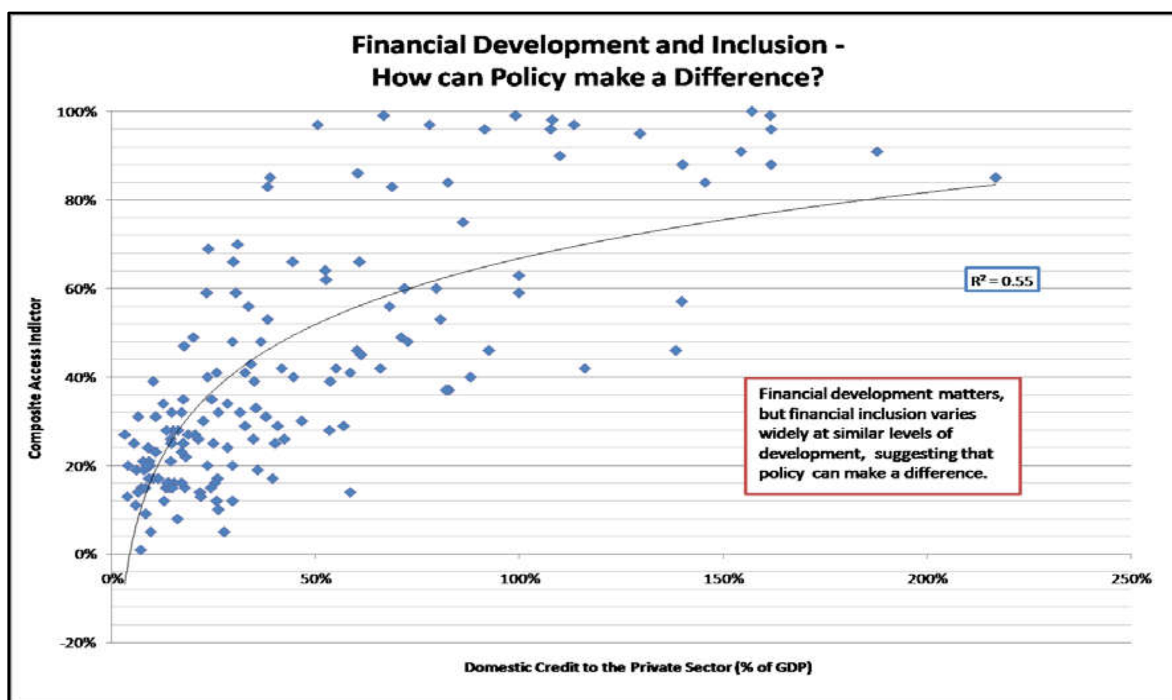
Figure 3. Composite Access Indicator versus GDP per Capita

Instead, it shows how in many countries, the number of financially excluded adults significantly exceeds the adult population living under the $2-a-day poverty line. Does this mean there is not a clear correlation between financial inclusion and economic development? It seems obvious that financial inclusion has some relationship to economic development. However, as Figure 3 shows, the correlation between GDP per capita and the composite access indicator is imperfect. Thus, for a given income level, there is a wide variation around the conditional mean represented by the regression line. This means that many other factors play a role determining the amount of people without access to formal

Again, it is possible to appreciate a wide variation in access for a given level of financial development. The potential increase in GDP per capita has a positive relationship with composite access indicator lying above the poverty line. This is strongly supported if GDP growth is more inclusive, impacting positively on majority of the population. There is evidence for the impact of financial inclusion on both aggregate growth and individual welfare. Consistent with the evolution of policy objectives, the research focus has been first on macroeconomic aspects of financial system development; only in recent years has it begun to address the microeconomic impacts of financial inclusion.

Macroeconomic and Microeconomic Evidence

Financial institutions contribute to growth by reducing information asymmetries that would otherwise hinder the efficient intermediation of resources among savers and investors. There is substantial evidence that financial development has a causal impact on growth, (Beck 2006; Hussein & Demetriades, 1996; Demirguc-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. More recently, the focus has shifted to links between finance and income inequality. Until very recently, the support for financial inclusion from a microeconomic level has been solely based on plausibility, anecdotal evidence, and data that were not subject to statistical tests, such as claims that 65 percent of Grameen Bank clients crossed the poverty line. Establishing a causal link from the use of financial services to improvements in the lives of the poor is methodologically challenging and very expensive. It requires eliminating influences of self-selection and survivor biases in the sample, as well as numerous unobservable effects that may confound the analysis. The method of choice is field experiments that establish this link through the creation of a counterfactual by randomly dividing a subset of the population into treatment and control groups.



Source: Hannig &Jansen (2010)

Note: a. R2 = 0.55. Financial development matters, but financial inclusion varies widely at similar levels of development, suggesting that policy can make a difference.

Source: Source: Authors' calculations based on data from Demirgüç-Kunt, Beck, and Honohan (2008),
World Bank "Finance for All" access data (http://siteresources.worldbank.org/INTRES/Resources/PRR_Data_for_Website.xls), and
World Bank World Development Indicators (http://data.worldbank.org).

Figure 4. Implications for Macroeconomic Efficiency and Individual Welfare

Beck *et al*. (2008) found a link between financial development, reduced income inequality, and poverty alleviation: the aggregate usage of financial services, that is, deeper financial systems, appears to reduce Gini coefficients, a measurement of inequality. There is also evidence at the macroeconomic level that broader financial systems enhance economic growth. Giné & Townsend (2004) show that, based on a general equilibrium model of the Thai economy, the expansion of access to the financial sector has significantly raised Thailand's growth rate. Conversely, Banerjee *et al*.(2009) emphasize the efficiency and productivity losses associated with preferential access to finance by the better off, and suggest a potential first-order effect of access on investment and growth. Finally, Pande & Burgess (2005) find a strong positive effect on rural poverty, using a "natural experiment" of new branching regulations in India that incentivized banks to expand into underserved areas. However, the high cost of this expansion policy outweighed the aggregate benefits. This result suggests large potential benefits from technology-enabled, lower-cost branch expansion. Then, statistical analysis is used to identify the differential effects of the intervention, such as exposure to a certain type of financial service. These randomized controlled trials (RCT) are critical to underpin the claim that financial inclusion positively affects the poor. RCTs are not without shortcomings, however: while methodological rigor produces results with high levels of internal validity, it is much more difficult to generalize beyond the specific context of the experiment to avoid external validity being substantially weaker. In Kenya, a randomly selected group of rural poor were offered savings accounts. The impact was found to be highly positive: uptake was very significant for female clients, and female market vendors reached higher daily expenditure levels within six months of opening an account. There was no evidence that savings accounts crowd out other investments though there was evidence that the savings accounts allowed for more efficient smoothing over shocks, particularly sickness (Pande & Burgess, 2005). This study also shows a more significant positive impact of savings accounts for women than for men.

Another RCT example from India provides evidence that the effect of microcredit depends on household characteristics:

- Business owners use credit to expand their businesses, as demonstrated by an increase in spending on durables and an increase in business profits.
- Those initially identified as having a low propensity to start a business do not increase investment but rather increase consumption, such as food and transportation.
- Households with a high propensity to start a business reduce nondurable spending, increase durable spending, and reduce temptation spending.

The business outcomes were significantly positive, including the creation of new businesses and the profits for existing business. While significant impacts are education, health and women empowerment were found positive, it requires much time for observation and impact assessment. Recent research in South Africa highlighted the risk management benefits of financial inclusion. Loan applicants that had been declined "at the margin" were randomly offered loans and turned out to be significantly less likely to report leaving a job after entering the sample than those rejected clients without loans. Treated households earned more and were more likely to move out of poverty. Overall, increased access to credit appears to improve welfare. The study does present evidence that short-term loans are an important cash flow management tool and that they have largely positive impacts on people's welfare, such as on employment and income. The study also found that loans to customers at slightly beyond the margin were actually profitable. Given the difficulty with drawing generalized conclusions from RCTs, new tools will be required to deepen understanding about which services matter most to low-income households and microenterprises, how they impact welfare metrics, and how policy tools can help relax binding constraints on the access frontier. In sum, recent evaluation techniques suggest that positive effects of microfinance exist, but they may take more time to materialize.

Financial Inclusion Policies: Recent Innovation

The financial sector is prone to market failure and, therefore, calling for heavy regulation. The low-income segment is particularly plagued by information asymmetries as participants on the demand side often lack a track record or collateral to pacify lenders' concerns. In addition, lenders lack experience in new markets at the bottom of the pyramid and face adjustment costs regarding business processes. At the same time, the limited size of both individual transactions and the overall market pose challenges to suppliers that need to recover fixed costs. However, once the pioneers of the microfinance 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. 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. Regulatory frameworks determine the set of institutions that are allowed to enter, shape the scope of available services, and affect institutions' cost of doing business. Prudential regulation is critical to enable financial intermediation and facilitate domestic resource mobilization and financial institution growth while simultaneously protecting savers. Furthermore, public ownership has frequently expanded outreach into segments that were considered beyond the scope of commercial approaches. Secured lending frameworks and public credit registries facilitate transactions despite asymmetric information. Finally, the low education level of poor clients suggests a need for consumer protection and financial education policies. Policymakers have struggled to accompany rapid innovation. They have been particularly successful where they facilitated experimentation within regulatory frameworks that carefully limited the potential risks. In some cases, policymakers have even taken the lead in introducing new solutions to the market through regulatory or legislative measures or direct participation in the market. The rapid pace of innovation has substantially increased the complexity of policymaking, calling for a rethinking of policy principles with respect to financial inclusion. On the other hand, there is substantial scope for stepping up peer-to-peer advice as innovative solutions are being generated by developing country regulations. To capture and compare emerging policy trends in developing countries, the German Gesellschaft für Technische Zusammenarbeit (GTZ[2]) assessed thirty-five policy solutions geared toward promoting financial inclusion across ten countries, six of which were found to be effective. Four have improved conditions for reaching the poor through various channels, including agent banking, mobile payments, diversification of providers, and state bank reforms. The remaining two solutions are consumer protection and financial identity policies, which play key roles in enabling financial inclusion, (Claessens, Honohan, & Rojas-Suarez, 2009).

Agent Banking

Policies that enable banks to contract with nonbank retail agents as outlets for financial services have proven highly successful in advancing financial inclusion where bank branches are not economically viable. Such policies leverage existing retail infrastructure as delivery channels, and turn pharmacies, post offices, filling stations, supermarkets, churches and retail shops in remote places not only into agents of banks but agents of financial inclusion, (Claessens, Honohan, & Rojas-Suarez, 2009). Collaboration among banks and agents has become possible as technology has reduced the costs and risks of the remote exchange of information to carry out financial transactions. Coupled with simplified account opening procedures and other incentives to use this channel, such as the delivery of cash transfers, financial system outreach and numbers of users can increase explosively as in Brazil, India, Rwanda, Chile, Colombia, Peru, Mexico, Kenya, among others. Brazil was the early leader in agent banking through the large-scale introduction of "banking correspondents" to distribute welfare grants to unbanked Brazilians. This solution addressed a key physical access barrier: only 1,600 municipalities had bank branches in 2000. Today, some 95,000 correspondents cover all of the 5,500 municipalities, and nearly 16 million accounts were opened at agents over three years. The Brazilian success has inspired similar approaches in Colombia, Peru, Mexico, and Chile. In 2006 Colombia passed enabling regulations allowing financial institutions to use retail agents, attracting 6,356 agents that initially focused on bill payments. Given the topography of Latin America, likewise in most developing countries often

[2] German Technical Cooperation

posing a major obstacle to improving access to financial services, it is not a coincidence that agent banking schemes are blooming in the region. With a huge percentage of population concentrated in large cities, the minority living in remote rural areas do not receive enough attention in terms of infrastructure, communications development, and services. This is particularly evident in countries like Brazil and Peru, where these minorities account for millions of people, affecting equally both poor and better-off residents. This is why (as shown in Figure 2), in countries like Brazil, Russia, Mexico, the population without access to financial services outnumbers the population living on less than $2 a day to a greater extent than holds in smaller countries. Critical features of the agent banking model are timely transaction settlement to minimise fraud, simplified account opening procedures, and customer due diligence compliant with international know-your-customer standards. The cost savings are substantial with sixty bank agents may be established at the same cost as one bank branch. The experience of Brazil's telecoms and mobile operators offer valuable lessons for other countries to replicate. A Brazilian agent is a service provider of a bank or telecoms or other financial institution. Any institution that is regulated by the central bank can contract an agent and persons can become an agent as long as the financial institution takes the responsibility and the relationship is governed by a public contract. The success of this model is based on its pragmatic and flexible approach. While the oversight is focused on the financial institution, with the central bank getting access to all data on the agent, it also gives the financial institution enough freedom to articulate the relationship with the agent on its own terms. The Mexican case shows that know-your-customer procedures for smaller transaction authority can also be delegated to agents.

Mobile Payments

Globally, 4 billion mobile phone subscriptions were projected for 2009, rising to 5 billion in 2012, 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 poor people. 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, 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[3] (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 far. The service has experienced rapid growth and currently enjoys a subscription base of more than 11 million registered customers, 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 22 percent over the same time frame. Mobile payments challenge regulatory capacity as they 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[4].

Diversifying Providers

Policymakers have adopted various regulatory and supervisory strategies to manage the risks of licensing a wider range of institutions to offer deposit and insurance products. Strategies to adapt banking regulations to the specific nature of microfinance include:

- Licences for specialized institutions dedicated to taking micro deposits,
- Bank licences for successfully transforming financial NGOs and
- Licences for non-bank financial institutions.

A tiered regulatory approach that differentiates institutions by permissible activities and limits credit risk exposure of lower-tier institutions minimizes risk from the central bank's standpoint. Regardless of the strategy chosen, high-level political leadership has proven critical in catalyzing regulatory initiatives to broaden access. In Peru, Bolivia, and Uganda, regulators have incorporated nonprofit innovators into the formal system by creating legal paths through a licence. This has led to higher savings, benefiting not only consumers but also institutions, enabling them to weather financial crises by making them less dependent on external and wholesale funding. In Bolivia two microfinance NGOs that transformed into banks, and six nonbank deposit-taking microfinance institutions (private finance funds), operating under a special regulatory framework, held a combined $1255 million in deposits as of June 2010. Of this amount, $758 million were held by the private financial funds, which opened almost 436,000 new savings accounts in the first half of 2010. New laws specially designed for previously unregulated NGOs, were passed in 2008. The main difference from the preceding model is that NGOs will not need to be transformed into private financial funds, instead, they will keep their nonprofit status and be allowed to collect deposits and offer extra financial services. NGOs will have the nature of nonbanking financial intermediaries but will be under the same rules as banks and financial entities. In Indonesia and many other developing countries, the entry barriers to the financial sector were lowered by the introduction of second-tier rural banks during financial sector liberalization in the late 1980s. After

[3] Cost of mobile payments $0.50 versus $2.50 at branch level

[4] See Central Bank of Kenya approach to regulating agency banking and mobile money instruments

initial explosive growth due to a very liberal licensing regime and post crisis consolidation, in 2009 there are 1,800 rural banks that hold more than $2 billion in deposits in 9.8 million accounts upsurged to $6.5 billion in 2014.

Financial Inclusion and Financial Stability Nexus

This section details the positive and negative relationships between financial inclusion and financial stability.

Financial inclusion positive Contribution to financial stability

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

- Greater diversification of bank assets as a result of increased lending to smaller firms could reduce the overall riskiness of a bank's loan portfolio. This would both reduce the relative size of any single borrower in the overall portfolio and reduce its volatility.
- 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.
- Greater financial inclusion could also contribute to a better transmission of monetary policy, also contributing to greater financial an economic stability (Khan 2011).

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 bases. Prasad (2010) also observed that lack of adequate access to credit for small and medium-size enterprises and small-scale entrepreneurs has adverse effects on overall employment growth since these enterprises tend to be much more labor intensive in their operations.

Financial inclusion negative on financial stability

On the other hand, there are a number of ways in which increased financial inclusion could contribute negatively to financial stability, also see Khan (2011).

- The most obvious example is an attempt to expand the pool of borrowers' results in a reduction in lending standards. This was a major contributor to the severity of the "sub-prime" crisis in the United States in 2008/9 financial crisis associated with poor underwriting and excessive lending.
- Banks could increase their reputational risk if they outsource various functions such as credit risk management in order to reach smaller borrowers.
- Finally, if financial institutions are not properly regulated, an increase in lending to the vast customer base could dilute the overall effectiveness of regulation in the economy and increase financial system risks.

This section aims at identifying links between financial stability and inclusion that could give rise to either policy conflicts or synergies, and outlines questions for future research. As happened during the 1990s with the Tequila Effect (1994), the Asian financial crisis (1997), the global financial crisis has 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 has gained a much higher profile as a policy goal in recent years, it is important to inquire to what extent there are trade-offs between the objectives of maintaining systemic stability and including a growing number of users of financial services. This appears even more relevant since the origin of the current crisis in the subprime market at least initially suggested destabilizing spillovers from the lower end of the market to the remainder of the system. 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. On the other hand, lessons learned suggest that past financial crises have frequently bypassed the highly localized markets at the bottom of the pyramid: the microfinance segment of BRI 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. To facilitate regulatory decision-making, the potential costs and benefits of financial inclusion with respect to stability and stress the need to differentiate among policy tools according to their risk profiles given the desired outcome. Financial stability is a widely accepted public goal because a sound financial system is one of the cornerstones for economic growth. Financial stability has a multidimensional scope that depends on the interplay of key elements of the system and requires that the key institutions and markets in the financial system remain stable. This does not preclude occasional failures of smaller institutions and occasional substantial losses at larger institutions; these "are part and parcel of the normal functioning of the financial system." (Crockett, 2008)

Financial Inclusion: A Potential Cause of Financial Instability?

Accordingly, one of the definitions that stresses asymmetric information, financial instability occurs when shocks to the system dramatically worsen information problems so that financial intermediation between savings and productive investment opportunities breaks down. Among these shocks, those due to deteriorating financial sector appear most closely related to financial inclusion. The exposure of financial institutions to risks from low-income markets depends on the share of their revenues that this line of business represents. Specialized microfinance institutions are most prone to these risks, although some large public banks have developed a significant footprint in the low-income segment. (crockett, 2008) However, microfinance clients typically have high repayment rates: when clients have few options in the formal sector, default likely implies much higher future borrowing costs in the informal sector. Hence, as formal options proliferate, credit bureaus become more important to keep

these incentives intact. On the other hand, the regulation and risk-based supervision of financial services in low-income markets appears better understood than in other segments of the market.

Large numbers of clients that frequently transact small amounts put substantial strain on supervisory resources but pose limited systemic risk because they represent such a small share of overall financial sector assets. As information technology proliferates, supervisory challenges will likely become manageable. As a result, regulators are often more concerned with issues of consumer protection raised by the lack of sophistication among low-income clients, and with reputational risks due to the large number of clients involved in case of institutional failures. This view is confirmed by recent studies on a new macro-prudential framework that screens instruments, markets, and institutions. The recent Bank for International Settlements study identifies two types of externalities as the key drivers of systemic risk: joint failures of institutions resulting from their common exposures at a single point in time, and the fact that the dynamics of the financial system and of the real economy reinforce each other, increasing the amplitude of booms and busts and undermining stability in both the financial sector and the real economy. In addition, the research shows that the marginal contribution to systemic risk by a financial institution is correlated in a nonlinear way with its size such that smaller institutions contribute disproportionately less risk. There have been reports about an incipient credit bubble in the rapidly expanding low-income sector in India, pointing to risks of excessive credit demand facilitated by lower financial education in developing countries. Given the high share of nonprofit institutions in the sector, excessive lending may be driven by disbursement pressure rather than profit motives, in contradiction to the subprime crisis. In addition, vast unmet demand makes bubbles less likely to develop on a larger scale. In sum, 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 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.

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. Microfinance institutions that do not mobilize deposits tend to be harder hit when a systemic crisis triggers a credit crunch, so that funds for on-lending to low-income clients are no longer forthcoming because existing credit lines cannot be rolled over. This has also been observed during the global financial crisis (CGAP 2009a). The transmission of a higher-level crisis through this credit channel can have a severe consequences for the local economy that otherwise might be more isolated from national or international shocks.

Conclusions and Recommendations: How Financial Inclusion Equips The Poor To Cope With Instability

The global economic crisis, despite its roots in financial sectors of industrial countries, will likely shift the focus of future financial inclusion policies. The fundamental rethinking of the role of government in finance triggered by the crisis has built huge momentum for regulatory change. Policymakers should seize the current reform drive to advance financial inclusion policies that foster economic resilience. Post crisis opportunities to promote financial inclusion hinge on the careful analysis of the risks posed by the transactions of the poor. In the absence of such analysis, the heightened risk perception could usher in an indiscriminate restriction of innovation. In formulating financial inclusion policies, policymakers should leverage successful innovations developed by their peers that realise the benefits of financial inclusion in safe ways. Peer-to-peer exchange among developing countries, as facilitated by the Alliance for Financial Inclusion[5], will help refine and spread these insights widely, enabling other countries to adapt and scale up successful innovations.

Most important, the crisis calls for a shift from credit to savings. Access to savings should be a top priority because it promises three important benefits:

- Enhanced household capacity to manage the vulnerabilities exposed by the devastating impact of the crisis,
- Diversified funding base of financial institutions to cushion the impact of a global credit crunch on domestic financial intermediation, and
- Deeper financial systems that enhance economic resilience by accelerating growth, facilitating diversification and reducing poverty.

The 2.5 billion unbanked adults are especially vulnerable to economic shocks because they are confined to the inferior risk management features of informal finance. Low-income clients that can build assets before a crash have somewhere to run for cover. Research has revealed substantial pent-up demand for formal savings that help overcome the costly credit barriers to business expansion. As a result, income and expenditures grow, and health outcomes prove more resilient to turmoil. Better household capacity to manage risks frees up public expenditure during times of crisis. Financial inclusion also has been shown to reduce income inequality. Stronger social cohesion helps prevent political instability and permits undivided attention to crisis management. Social safety nets can simultaneously boost financial inclusion when benefits are delivered through basic bank accounts in the formal financial sector. With the subprime meltdown illustrating the dangers of reckless lending practices, consumer protection has surfaced on the policy agenda. Financial education initiatives have been gaining momentum recently; policymakers now see a stronger rationale to build financial education into high school and college curricula, and seek greater participation from the private sector in this endeavour.

[5] a global network of policymakers in developing countries

However, further research is needed, especially in the following fields:

Key barriers to access: at the strategic level, systematic diagnostic efforts to identify "binding constraints" to financial access will help policymakers set priorities for action. Regulatory decision making will allow for a deeper understanding of the impacts of specific products or services, and should be used more systematically to obtain insights into the appropriate sequencing of reforms.

Data and evidence: updated information on levels and trends of financial inclusion is a critical step toward evidence-based policy decisions. Data collection must be tailored to objectives and available resources. Policymakers should expand collaboration with local researchers to build capacity for the collection of demand-side data.

Risk: greater risk analysis of the scaling-up of technology-based financial inclusion policies with respect to financial stability is necessary to fill critical knowledge gaps due to rapid recent innovation.

It is important to note that building synergies between financial inclusion and financial stability includes but not limited to diversification of bank assets, thereby reducing their riskiness; increased stability of their deposit base, reducing liquidity risks; and improved transmission of monetary policy. Provision of training, safety nets, financial education, income generating activities, financial linkages, adopting innovation and technology in financial delivery, among others, can to a large extent inspire positivity of financial inclusion and financial stability. Higher per capita GDP tends to increase financial stability, while a higher ratio of private bank credit to GDP may reduce financial stability. However, the erosion of credit standards (e.g., sub-prime), bank reputational risk, and inadequate regulation of financial institutions can impact negatively on financial stability.

Overall, a combination of showcasing of viable business models at the bottom of the pyramid, technological innovation that lowers transaction costs, and rapid growth and progress in poverty alleviation over the past years has helped to attract substantial private sector investment and push the access frontier outwards. Policymakers have facilitated strong results by adapting regulatory frameworks to financial innovation in the low-income market segment, and have been able to do so without falling short of their policy goals of financial stability. With these recommendations, there is potential to make the necessary gains in expanding financial access without compromising financial stability. The global financial crisis thus offers a unique opportunity for policymakers to advance financial inclusion policies that promote financial and economic resilience in the developed and developing world.

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