

Can financial inclusion and financial stability go hand in hand?

María José Roa García¹

ABSTRACT

This study addresses the relation between financial inclusion and financial stability. In order to do so, we review studies on the diverse possible links between these two financial phenomena for developing countries. Although some results are still preliminary, from the reviewed studies we can draw some conclusions. First, risk may rise from rapid credit growth associated with new financial inclusion institutions and instruments, and from unregulated parts of the financial system. However, broader access to deposits that leads to a more diversified base of deposits, could improve significantly the resilience of the overall financial system and thus financial stability. A further conclusion is that it is important to specify what type of state intervention or regulation is necessary in the particular case of financial inclusion. The application of standards and other measures that guarantee financial stability might prove to be a setback to inclusion processes.

1. INTRODUCTION

In this paper we discuss the extent to which the growing importance of institutions and instruments that promote financial inclusion could be considered a threat to the financial stability of developing economies. Certain actors and organisations responsible for financial stability have recently begun to stress that the links between stability and financial inclusion might be more complex and less well understood than previously thought.

The Financial Stability Board (FSB), together with the International Monetary Fund (IMF) and the World Bank (WB), published a report on financial stability which covered topics of particular interest for emerging economies (FSB, IMF and WB 2011). The report identifies the growing proliferation and development of financial institutions, which lend to and take deposits from people and small and medium enterprises (SMEs) on a very small scale. It underlines how these institutions' very rapid growth and ever-closer connection with the rest of the financial system (in particular banks),

combined with an inadequate regulatory framework and very limited instruments for supervision and capacity, could have adverse consequences for the financial stability of these economies.

For their part, the annual reports on financial stability of emerging countries also construe financial inclusion institutions as increasingly important and expansive savings and investment vehicles for households and the public. A large part of these institutions carry out financial activities that play the part of bank credit, but within a regulatory framework that is either non-existent, or much more lax than that existing for formally-constituted banking institutions. The same thing happens with regulation of new financial inclusion products, which in many countries is limited or non-existent. In developed economies, the recent financial crisis showed that certain overly-aggressive policies of financial inclusion can have highly negative consequences, giving rise to tension between financial stability and greater access for the population (McLean and Nocera 2010).

In an attempt to shed light on this issue, in this paper we investigate the relation between financial inclusion and financial stability. In order to do so, we carry out a comprehensive review of studies on the diverse possible links between financial stability and inclusion. The paper is organised as follows. First, we analyse the different dimensions of the concept of financial inclusion, as well as how it may be measured. Second, the concept of financial stability and the main indicators are presented and discussed. Third, we go over the most important works to have addressed the relationship between financial stability and inclusion. Fourth, the main regulation and supervision measures that ensure that inclusion and stability go hand in hand are explored and discussed. Finally, we lay out the argument and its principal conclusions.

2. FINANCIAL INCLUSION

Definitions and indicators for financial inclusion that are globally accepted have been provided by some of the key international bodies responsible (AFI 2011; GPFI and CGAP 2011; García *et al* 2013). We can extrapolate from these definitions the multidimensional nature of financial inclusion, where their basic elements are access and use and, more recently, *quality* (Roa 2015).

The lack of *access* has traditionally been defined as a type of limitation or observable barrier resulting from the frictions associated with the financial sector: information and transaction costs (Honohan 2004; Beck and De la Torre 2007). Concretely, information frictions give rise to barriers such as requirements of collateral, documentation, or high tariffs that a large part of the population cannot meet. Alternatively, high transaction costs (especially in remote rural areas) make opening a bank branch or financial services point unprofitable. In developing or rural economies, in particular, the segmentation of the market, the dispersion of producers and the lack or bad condition of road networks contribute to very high transaction costs.

For the most part, financial infrastructure and distinct distribution channels for financial services (branches of bank and non-bank institutions, financial services points, ATMs and agent banking) are taken as indicators of access.

The IMF's Financial Access Survey (FAS) is a good source of access indicators. The survey is the only source of supply-side data that includes information on access to, and use of, basic consumer financial services by resident households and nonfinancial corporations. The database currently contains annual data and metadata for 189 jurisdictions, covering an eleven-year period (2004-2014), and that enable international comparisons to be made. The FAS suggests that there have been significant increases in financial inclusion over the past decade. In terms of the geographical outreach of financial services, the number of commercial bank branches per 100,000 adults increased from three to five during 2004-12 in Africa, and from 11 to 23 in Latin America and the Caribbean. Further, the number of ATMs per 100,000 adults surged in Eastern Europe. The use of financial services has increased as well, with the number of deposit accounts per 1,000 adults rising.

With regard to the lack of use, this occurs when private agents have access to but employ a low or non-existent use of financial services, for reasons such as: lack of financial knowledge or education; lack of savings, employment or income; mistrust of financial institutions; fear of getting into debt; or as the result of the psychological impact of systematic discrimination in the past. Indicators of use bring together information on the number of people who possess one or more savings, credit, insurance or payment-system financial products, and the frequency, regularity and length of time they use them. This information comes as much from the demand side as the supply side of financial products. As sources of data on use, we could highlight the FAS and the Global Financial Inclusion Database (Demirgüç-Kunt and Klapper 2012; Demirgüç-Kunt *et al* 2015). The Global Financial Inclusion (Global Findex) database, launched by the World Bank in 2011, provides comparable indicators of financial inclusion. The database reveals that 62 per cent of adults worldwide have an account at a bank or another type of financial institution or with a mobile money provider. Between 2011 and 2014, 700 million adults became account holders while the number of those without an account dropped by 20 per cent to 2 billion. This increase has been driven by growth in account penetration of 13 percentage points in developing economies, and innovations in technology — particularly mobile money. Along with these gains, the data also show that opportunities remain to increase financial inclusion.

Beyond access and use, the most current definitions of financial inclusion insist on the importance of the characteristics of this access and use of financial services. In this way, a third dimension has started to be included in the concept of financial inclusion, one that goes more deeply into the *nature* and *characteristics* of access and use. This is generally understood to refer to

the *quality* and *efficacy* of access to and use of financial services (CGAP and WB 2010; AFI 2011). Although concrete indicators still do not exist, all agree that the referential framework to measure this dimension ought to take into account issues such as the diversity and adaptability to clients of the product, the variety of and alternatives to financial services, appropriate regulation and supervision of financial services and products, as well as policies related to consumer protection and financial education.

3. FINANCIAL STABILITY

Since the 2007 global financial crisis the importance of maintaining financial stability has attracted the attention of academics, policymakers, and practitioners. The Financial Stability Board (FSB 2011) indicates that financial authorities need to focus their attention on a credit intermediation system that includes entities and activities outside the banking system, which can pose a systemic risk. Additionally, the financial crisis alerted policymakers to the need for a macroprudential dimension to financial surveillance and regulation. In particular, the approach to the development of these measures of financial system stability has changed over the years, as the locus of concern moved from microprudential to macroprudential dimensions of financial stability. From the analysis of early warning indicators to monitor the state of the banking system, particularly the risk of default of individual institutions, the focus has shifted to a broader system-wide assessment of risks to the financial markets, institutions and infrastructure: systemic financial risk (FSB, IMF and BIS 2009). Consequently, a key goal of the policy reforms has been to reduce the risks associated with systemically important financial institutions whose disorderly failure, because of their size, complexity, and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity.

For the design of interventions, the general consensus is that defining financial stability is crucial. However, financial stability is considerably more difficult to define and measure than other traditional policy goals, such as price stability, given the interdependence and the complex interactions of different elements of the financial system between themselves and with the real economy. Notwithstanding, different research and policy studies, some common elements are derived (Ponce and Tubio 2010; Alawode and Al Sadek 2008).

It is very common to relate financial stability with the main functions of the financial system — allocate savings to more productive investments and the provision of a payment system — and with the resilience of financial system to different shocks. For example, Padoa-Schioppa (2002 p 20) contends that ‘...financial stability is a condition where the financial system is able to withstand shocks without giving way to cumulative processes, which impair the allocation of savings to investment opportunities and the processing of payments in the economy’. Mishkin (1999 p 7) states that ‘financial instability

occurs when shocks to 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’.

As many central banks established financial stability departments and began publishing *Financial Stability Reports*, they have also adopted these theoretical definitions in order to provide some guidance to their objective of safeguarding financial stability (Alawode and Al Sadek 2008). Overall, definitions of financial stability emphasise the resilience to shocks and continued ability to perform effectively the basic functions of intermediation savings and investments in the real economy. Indeed, the inability to absorb shocks seems to be crucial factor, because it can lead to downward spiral whereby they are propagated through the system and become self-reinforcing, leading to a general financial crisis and disruption of the financial intermediation mechanism (systemic risks).

The global Standard-Setting Bodies (SSBs), together with the Financial Stability Board (FSB), determine a combination of principles, practices and guidelines — called standards — which are internationally-accepted as a means of promoting the functioning of the domestic financial system and international financial stability. The regulatory frameworks seek to strengthen the resilience of the banking system through prudential measures that will enhance the quality of capital; increase the level of capital; promote the build-up of capital buffers to mitigate pro-cyclicality; supplement the risk-based capital requirements with a leverage ratio; and introduce a set of global liquidity standards.

There is as yet no widely-accepted set of measurable indicators of financial stability that can be monitored and assessed over time; in general, it is measured by different indicators. In part, this reflects the multifaceted nature of financial stability, as it relates to both the stability and resilience of financial institutions, and to the smooth functioning of financial markets and settlement systems over time. However, it also reflects the relatively young age of the discipline of assessing financial stability.

Nevertheless, to assess the stability of the financial system and the banking sector, policymakers use different approaches, including the calculation of financial soundness indicators, stress testing, development of the financial or banking sector through financial deepening, capital adequacy, asset quality, and management soundness among others. The set of Financial Soundness Indicators² (FSIs) developed by the IMF is an example of such indicators. The World Bank’s Development Indicators database³ (GFDD) also includes financial stability indicators.

3. LITERATURE REVIEW

Studies on the diverse possible links between financial stability and inclusion are new and on the whole realised by those institutions, international bodies, policy makers, regulators or supervisors responsible for safeguarding financial

inclusion and/or stability. Until very recently, the majority of the documents comprised case studies from countries or regions, gathered in working documents or speeches, which do not explore nor demonstrate empirically the proposed links. They also neglect to apply a concrete conceptual framework. The different authors emphasise the need for solid and rigorous theoretical and empirical analysis into these links.

3.1 Case Studies

Firstly, there is a group of documents which discuss the positive effects on stability of financial inclusion (Hannig and Jansen 2010; Khan 2011; Cull et al 2012; Rahman 2014). They show, using various arguments, how greater financial inclusion offers different opportunities for the promotion of financial stability, by: i) producing a more diversified funding base of financial institutions, and taking in a wider spectrum of economic agents who contribute to a more resilient economy; ii) leading to more extensive and efficient savings intermediation; iii) improving the capacity of households to manage the different vulnerabilities to which they are exposed; iv) providing a more stable base of retail deposits (for example, low-income savers and lenders tend to display solid financial behaviour during financial crises, keeping their deposits in a safe place and paying off their loans (CGAP 2009)); v) restricting the presence of a large informal sector, which could limit the effectiveness of monetary policy; vi) possibly facilitating the implementation of money-laundering and terrorism-financing laws; and vii) facilitating the reduction of income inequality, thereby allowing for greater political and social stability.

These studies also point out the possible risks that financial inclusion could imply for financial stability. These risks stem from the nature of low-income clients, from local financial institutions, from innovations in financial products, and from outsourcing activities. Participation in the financial system by low-income segments of the population is associated with high transaction and information costs, giving rise to inefficiencies that are difficult to resolve (lack of collateral or credit history). The information asymmetries that characterise financial systems — which are a fundamental source of their inefficiencies — could increase. Local institutions — such as cooperatives or rural banks — have presented risks associated with poor governance, lack of regulation and supervision, inter-institutional lending, and high geographic concentration, which makes them vulnerable to natural disasters and recessions. Innovations in financial products and outsourcing activities imply new risks related to a lack of regulation or supervision, which can endanger financial stability.

The authors, however, argue that the nature of the risks associated with these institutions is at an institutional and not a systemic level. They affirm that the institutional risk of these segments of the population (given that they represent a large number of vulnerable clients who have limited salaries and carry out small transactions) may be treated with supervisory

and regulatory prudential tools that have already been developed, in particular for new financial instruments such as mobile banking or agent banking. They affirm, moreover, that the regulation and supervision of financial services for these segments of the population are better understood than in other segments of the market. Alongside prudential measures, they underline the importance of the development of more effective policies for consumer protection and financial education programs.

Secondly, there is a series of documents - the product of conferences and projects organised among the principal bodies responsible for financial inclusion and stability - that sketch a series of general guidelines, related with regulation and supervision issues, to ensure that inclusion and stability go hand in hand.

One of the main bodies responsible at the international level for financial inclusion, the Alliance for Financial Inclusion (AFI), has recently worked with global SSBs on various projects that seek to analyse the various connections between financial stability and inclusion. Their first joint project was the elaboration of a white paper (GPMI and CGAP 2011), in which are suggested different ways that SSBs could integrate financial inclusion with the established standards and guidelines for ensuring financial stability. In order to make this happen, the authors highlight the need for the following to be taken into account: i) the evaluation of the risks of financial exclusion; ii) the analysis of the nature of the new risks implied by financial inclusion, as well as the country context; and iii) an analysis of the importance of the principle of proportionality in regulation: *the balance of the risks and benefits in the face of the costs of regulation and supervision* of different financial inclusion instruments and institutions.

The second joint project was the preparation of five country case studies in order to explore the application of SSBs' standards and guidance at the country level in countries at the forefront of pursuing a financial inclusion policy agenda (Brazil, Kenya, Mexico, the Philippines, and South Africa). The third joint project undertaken by GPMI and the SSBs has been the organisation of two annual conferences on the compatibility of financial inclusion policies and the application of standards and other measures that guarantee financial stability. Under the title 'Promoting Financial Inclusion through Proportionate Standards and Guidance', the first conference discussed the changes which SSBs are adapting to in their efforts to expand financial inclusion without endangering stability (GPMI and BIS 2012).

During the first conference, the main links between financial stability and inclusion were explained. A more inclusive financial sector: i) would have a more diversified and stable retail deposit base; ii) would probably have greater political legitimacy, decreasing political risk and social instability (which could lead to financial instability); and, iii) would have the potential to increase economic stability, an essential component of financial stability. The following statements were also made on how stability affects financial inclu-

sion: i) stability increases confidence in the financial sector by incentivizing the participation of agents in the formal sector; and ii) stability can positively affect variables which reduce the price of financial products and services (inflation or interest rates), making those more attainable to the lowest income sectors.

The different sessions underline the importance of the principle of proportionality in regulation for the elaboration of standards and guidelines relevant to financial inclusion and its implementation at a national level. It was asserted that this principle has been applied above all in developed countries and banks. As a result, there are very few guidelines on how to apply the principle to developing economies and non-bank institutions (microfinances, cooperatives, etc.) or new deposit-like products (electronic money), essential to financial inclusion. A few countries have pioneered adapting the principle of proportionality to their regulatory frameworks and made progress towards financial inclusion. Some examples of the application of this principle in India were presented: letting informal groups open savings accounts, relaxing the norms for opening savings accounts, or creating simplified accounts, authorising financial services points, deposit insurers and specific regulation of microfinance, and trying to formalise informal lenders.

The second GPMI Conference on Standard-Setting Bodies and Financial Inclusion discussed current learning and thinking on standard setting and innovative digital approaches to financial inclusion (GPMI and BIS 2014). During the conference, the participants explored the implications of low-cost digital transaction platforms for regulators, supervisors, standard-setting bodies and customers themselves. The themes discussed at the conference focused on exploring what lies ahead in terms of digital financial inclusion and on working to determine the roles that SSBs can play in influencing the changing landscape of digital financial inclusion.

Outside the context of these conferences, but related to the application of regulations, we would like to highlight the preoccupations of some actors and international bodies regarding how the stricter prudential regulation that has been followed since the crisis might be capable of creating incentives for regulatory arbitrage (Tetangco 2012). In particular, banks can be incentivised to transfer risks to other institutions, or to register transactions in which they are not bound by new prudential requirements. Upon elaborating these measures, authorities should try to reduce the reach of such arbitrage. This is particularly important in the designing of provision requisites or capital requirements, requisites of minimal liquidity, or limits or prohibitions related to certain currency mismatches or transactions.

With reference to the impact of post-crisis regulations, Fernández de Lis (2010) discusses the possible effects on financial inclusion of those international financial reforms that have emerged since the crisis, focused on fostering financial stability. As the author indicates, these reforms were aimed principally at systemic financial institutions in developed countries, and should

not impact on institutions that have traditionally been mechanisms for financial inclusion. All the same, the author indicates that setbacks might arise for inclusion processes, as measures are adopted addressing financial intermediation, such as an increase in capital requirements or taxes on banks or financial transactions.

Hawkins (2006) highlights the distinct regulatory interventions through which central banks can promote financial stability and inclusion: i) through tiered banking; ii) by stimulating competition in the banking system; iii) by establishing principles of transparency for payment systems as well as access and procedure standards, as much for banks as for non-bank institutions; iv) by identifying the appropriate base for the financing of deposit insurance and appropriate coverage limits, as well as stimulating the strength of each insured institution; and v) by guaranteeing appropriate supervision of foreign banks.

More recently, Mehrotra and Yetman (2015) discuss the possible impacts of financial inclusion on both the effectiveness of monetary policy and financial stability, and the implications for central banks. Regarding monetary policy, the authors suggest that increasing financial inclusion facilitates smooth consumption, as households have easier access to saving and borrowing products. As a result, output volatility is no longer as costly. This may facilitate a central bank's efforts to maintain price stability. Further, growing financial inclusion is likely to increase the relevance of interest rates in monetary transmission, as a result of an increase in the proportion of economic activity that depends on interest rates. This tends to improve the effectiveness of monetary policy.

Concerning financial stability, based on different empirical studies that we shall discuss in the next section, there are various ways in which increased financial inclusion could be beneficial for financial stability. However, the benefits depend on the nature of the improved financial access. Specifically, excessive credit growth could lead to higher risk in an unregulated financial system.

3.2. Empirical studies

Most of the studies reviewed in the previous section emphasise that the nature of the links between financial inclusion and stability is understood — but only partially, in terms of very specific and isolated cases. For this reason, a more solid empirical base must be developed in order to study them. A growing group of studies, mainly from the World Bank and the International Monetary Fund, have begun to analyse empirically the relationship between stability and financial inclusion.

Ardic *et al* (2013) explore the relation between financial access and financial stability through correlations between the two that use commonly accepted indicators. The study argues that, although the literature on links between stability and inclusion establishes a positive relationship between the

two phenomena, the empirical evidence still does not seem to confirm such a relationship. Statistically speaking, when measured in terms of deposit account penetration, financial inclusion has neither a positive nor a negative correlation with the FAS and the GFDD. The authors suggest that the lack of a positive correlation may be caused in part by a lack of solid data, but it may also mean that the relationship between financial inclusion and financial stability is not straightforward. Ardic *et al* (2013 p 35), conclude by suggesting a few recommendations for further empirical research on the financial inclusion and financial stability links. They advise: 'a) Ascertaining the existence or nonexistence of systemic risk factors stemming from greater financial access; b) better understanding the qualitative nature of access, with a focus on what constitutes responsible access. For example, it makes sense that greater financial protection, a key element of responsible finance, leads to less over-indebtedness overall; and c) understanding both how the regulatory environment determines how access is managed, while ensuring financial stability, and where a proportionate regulatory and supervisory framework can play a role in fostering the linkage is needed.'

A deep analysis of FAS data reveals some evidence for the relationship between inclusion and financial stability. In particular the Global Financial Development Report (WB 2012) shows that financial access and financial stability correlate better in low-income and lower-middle income countries, where access problems are more severe. Specifically, there are negative and statistically significant correlations between financial access (measured by number of loan accounts per 1,000 adults) and two other indicators of stability: bank nonperforming loans/loans and risk premiums.

On the other hand, there is also a negative correlation with bank capital/assets, meaning higher loan penetration in markets with lower capitalised banks. This may be explained by the fact that that some countries with high incomes and high levels of access suffer from a series of linked factors that entail greater instability, such as smaller capital requirements or fewer personal incentives to monitor risk. On the other hand, banks in low-income countries have higher capital-to-assets ratios (whether to meet regulatory requirements or simple prudence), given regulatory requirements and less sophisticated capital structures. This corresponds also to the fact that lower- and lower-middle-income countries in fact responded more proactively than high-income countries to adopt more prudent regulatory frameworks in response to the financial crisis (Cihák *et al* 2012). In addition, the data show that countries with more competitive banking sectors have higher deposit penetration and greater stability.

Han and Melecky (2013) examine the link between broader access to bank deposits prior to the 2008 crisis and the dynamics of bank deposit growth during the crisis, while controlling for relevant covariates. Employing proxies for access to deposits and the use of bank deposits, the authors find that greater access to bank deposits can make the deposit funding base of

banks more resilient in times of financial stress. Policy efforts to enhance financial stability should thus not only focus on macroprudential regulation, but also recognise the positive effect of broader access to bank deposits on financial stability.

Čihák *et al* (forthcoming) measure the linear interdependence between stability and inclusion at different levels of aggregation, using a non-parametric approach. They characterise the financial inclusion indicators by both type of agent and type of financial services. The financial stability measures focus on resilience, volatility and banking crises. They use the Spearman's rank correlation as a normalised and robust measure of covariance. The data for financial inclusion used are the GFDD, the Global Findex, and the FAS. The data cover 158 countries over 2009-2014.

Their results show that although the average correlations suggest a prevailing tradeoff between inclusion and stability, the distribution of pair correlations points to a high probability of both tradeoffs and synergies in advancing inclusion and stability. The correlations at increasing levels of stability imply the tradeoff could be unvaried for inclusion of people, but an inverted-U shape for inclusion of firms, for which an optimal level of financial stability/instability may exist to maximise inclusion.

In addition, the empirical results show that tradeoffs may largely originate in spurts of access to credit on the one hand, or periods of large instability and restoring resilience on the other hand. Along the same lines as Han and Melecky (2013), the possible synergies could come from an increased use of savings and penetration of insurance, which boosts the resilience of the economy and financial services.

Morgan and Pontines (2014) estimate the effect of two measures of financial inclusion (and some control variables) on some measures of financial stability — bank non-performing loans and bank Z-scores (GFDD). The two measures of financial inclusion used in the analysis are small and medium-sized enterprise (SME) outstanding loans as a proportion of total outstanding loans of commercial banks; and the number of SME borrowers as a proportion of the total number of borrowers from commercial banks (GFPP and FAS). To analyse the potential link between financial inclusion and stability, they estimate a dynamic-panel equation. They find some evidence that an increased share of lending to SMEs aids financial stability, mainly reducing non-performing loans and the probability of default by financial institutions. They also find that higher per capita GDP tends to increase financial stability, while a higher ratio of private bank credit to GDP reduces financial stability.

More recently Dabla-Norris *et al* (2015a, 2015b) develop a micro-founded general equilibrium model with heterogeneous agents, to identify relevant constraints to financial inclusion. They evaluate quantitatively the policy impacts of three constraints separately, and in combination, on GDP, inequality, and non-performing loans. In particular, they focus on three dimensions of financial inclusion and their associated constraints: access (participation

cost), depth (size of collateral constraints), and intermediation efficiency (size of the interest rate spreads and monitoring cost). The authors take the model to firm-level using data from the World Bank Enterprise Survey for six Asian and African countries with different degrees of development (Uganda, Kenya, Mozambique, Malaysia, the Philippines and Egypt) (Dabla-Norris *et al* 2015a) and for Latin American countries (Dabla-Norris *et al* 2015b).

Their findings suggest that country-specific characteristics play a central role in determining the impacts, interactions, and trade-offs between macroeconomic variables and policies. Moreover, the model simulations indicate that different dimensions of financial inclusion have a differential impact on GDP, inequality and financial stability and that there are trade-offs. Specifically, making participation cost equal to zero or reducing monitoring costs to zero increase both GDP and equality, but taking collateral to the world minimum has a positive effect on GDP and a mixed effects on the Gini coefficient. Regarding the effects on financial stability, reducing collateral constraints raises GDP and increases non-performing loans. The authors conclude that policies to enhance inclusion encompass developing appropriate legal, regulatory, and institutional frameworks and supporting the information environment. Also, they point out the need to promote basic and financial literacy to avoid over-indebtedness.

In recent studies, Sahay *et al* (2015a) analyse the benefits from further financial development, in terms of growth and stability. Financial development is defined as a combination of depth, access and efficiency. They show that the positive effect of economic growth weakens at higher levels of financial development. Interestingly, the weakening effect comes from financial deepening, rather than from greater access or higher efficiency. Therefore, countries that may have reached the maximum growth benefits from deepening financial institutions could further achieve growth benefits from more access. Regarding stability, the relationship between financial development and economic stability is also nonlinear. Besides, financial stability risks increase with financial depth. Better regulation is what promotes financial stability and development.

Sahay *et al* (2015b) study the linkages of financial inclusion with economic growth, financial and economic stability, and inequality. The authors emphasise the importance of considering financial inclusion as a multidimensional concept: the details matter. Therefore, the analysis covers financial inclusion from various elements: channels and modes of access, deposits, credit and insurance. The indicators include the providers' (number of branches of commercial banks and ATMs per 100,000 adults, FAS) and the users' sides (Global Findex).

First, by using simple cross country regressions, the authors show that the initial levels of various types of financial inclusion indicators have a positive impact on 10-year growth. Specifically, greater access of firms and households, as well as increasing women users of these services, lead to higher

growth. Furthermore, sectors dependent on external financing grow more rapidly in countries with greater access and use, and financial inclusion is especially beneficial in sectors where pledging collateral is more difficult. However, the marginal effects to growth of increasing both financial inclusion and depth begin to decline at high levels of financial development (the benefits could be even negative for some advanced economies). The analysis shows that benefits of financial inclusion on growth are separate from those get from the general level of financial development.

Concerning financial and economic stability, the authors argue that financial stability risks increase when access to credit is expanded without suitable supervision (Čihák *et al* 2012). In countries with high levels of bank supervision, measured by compliance of the Basel Core Principles for Effective Banking Supervision, credit access is positively associated with higher bank buffers, and vice versa. In addition, the relationship between growth volatility and credit access is significant and positive. The effects on financial stability of increasing the access and use of other financial services are still inconclusive (Čihák *et al* forthcoming).

Sahay *et al* (2015b), conclude by pointing out that economic growth benefits decline as both financial inclusion and depth increase, and there exist trade-offs with financial stability. In that sense, promoting financial inclusion needs to be accompanied with improving financial supervision. Inclusion efforts are best targeted toward addressing market failures (such as involuntary exclusion) instead of a general increase in bank credit.

These newer empirical studies make clear the necessity of going forward with statistical analysis and data-collection, as well as an investigation into the basis of the relation between financial stability and inclusion. Beyond lack of data or solid indicators, some authors indicate that this lack of correlation could be attributed to the fact that the relationship between inclusion and stability is not direct. Regardless, from these empirical studies it is concluded that an increase in credit access without appropriate regulation seems to be the main factor that could lead to greater financial instability. On the other hand, the increase of the deposit base seems to be a financial stability factor. In any case, appropriate regulation is crucial.

Finally, a few empirical studies have also studied whether microfinance - one of the most popular instruments for financial inclusion — acts as a shock-absorber, tending to restrain the magnitude of fluctuations, or as an accelerator, tending to amplify them in times of macroeconomic crisis. In relation to events prior to the recent global crisis, Patten *et al* (2001) have argued that in the midst of a severe macroeconomic collapse in Indonesia between 1998 and 2000, lending and savings deposits within the Indonesian microfinancial system experienced continuous increase. Consequently, investment by small businesses was able to increase as well: microfinance was acting as a shock-absorber. But these tendencies are not seen everywhere. Rhyne (2001) shows that in Bolivia, several institutions that propelled the Bolivian

economy during the boom of the 1990s declined even more severely than the national economy, and microfinance had scarcely exercised any countercyclical influence in the aggregate. Marconi and Mosley (2006) state that the effect of microfinance on the aggregate is due, in part, to institutional design. In particular, those organisations which provided savings, training and quasi-insurance services bounded the trend of rising default rates and falling lending through the crisis and did particularly well, whereas the new variety of consumer-credit microfinance organisations did particularly poorly. In line with IMF and WB studies, this experience suggests that it may be appropriate to call into question the ‘credit-only’ model of microfinance.

4. REGULATORY FRAMEWORK

The majority of the studies reviewed here suggest that greater financial inclusion, understood in terms of greater access to and use of formal financial intermediaries, reduces financial instability through: i) a more diversified and stable retail deposit base, ii) more efficient intermediation of resources, and iii) enhanced household capacity to manage vulnerabilities and shocks. Similarly, the principal theoretical and operative definitions of financial stability posit the existence of financial institutions that develop effective intermediation of resources and diversification of risk, as an essential element in guaranteeing financial stability. In addition, some studies affirm that greater access to formal financial markets would reduce the risks associated with participation in the informal financial sector.

Nonetheless, the work of De la Torre *et al* (2012) explains how the process of reducing agency frictions and collective frictions that increase access to and use of financial markets, can give rise to problems of financial instability. The authors call this the dark side of financial development. Eliminating agency frictions and transaction costs promotes stability and access to financial markets. But there are other frictions, related to financial activity, in which a greater number of agents participate, that can endanger stability. Concretely, the authors indicate that positive externalities related to a greater participation in the market in good times, can become failures of coordination, parasitism or negative externalities in bad times. Moreover, greater participation can also give rise to problems of collective cognition which endanger financial stability (Akerloff and Schiller 2009). The authors conclude that regulation can be an antidote to the instability and systemic risk that underlie financial development.

In fact, according to the studies reviewed, the existence of i) adequate regulation and supervision of new financial inclusion instruments and institutions, ii) effective financial consumer protection policies, and iii) programmes of financial education, are key in ensuring that greater access and use do not endanger financial stability. These measures are related to those taken after the recent financial crisis in developed countries, especially those of regulation and supervision. As was mentioned above, after the crisis, finan-

cial authorities needed to focus their attention on the regulation and supervision of a credit intermediation system that includes entities and activities outside the banking system that can pose a systemic risk.

Nevertheless, the risks and frictions associated with financial inclusion could be different to and less pronounced than those associated with financial development in its most advanced stages (especially some sophisticated credit intermediation activities), as are the measures to be applied. Therefore, it is important to specify which are the concrete risks associated with financial inclusion, as well as the type of state intervention or regulation needed.

In this sense, Global Standard Setting Bodies are recently recognising developing country realities. For example, the Basel Committee for Banking Supervision and the Financial Action Task Force have a membership primarily comprised of advanced economies, but is now working with developing and emerging country policymakers. Historically, financial risks were believed to originate from developing and emerging countries with less rigid regulations. As a result, rules and standards prescribed by advanced economies tended to overlook developing country perspectives. But now, as innovative financial inclusion efforts develop and more financial service providers and products become available, SSBs have started to engage with financial inclusion regulators and advocates. The GPMI (2011) has also elaborated case studies on five countries (Brazil, Kenya, Mexico, the Philippines and South Africa), analysing their experience in implementing international financial standards and their interaction with financial inclusion policies. A survey was prepared for the latter and answered by the most important regulatory authorities in each country.

Meanwhile, the Maya declaration commits members of the AFI⁴ — mainly central banks and regulators — to four actions, including implementing a framework based on the principle of *proportionality* for regulation strengthening the linkages between inclusion and financial stability. Central banks are indeed increasingly pursuing financial inclusion because of its contribution to financial stability (Hannig 2013, 2014). Regulators hope that expanding financial access will also provide greater stability to the overall financial system, as the market becomes larger and more diverse. But they also show that greater financial access may increase financial risks if it results from rapid credit growth or the expansion of relatively unregulated parts of the financial system. It is important to distinguish between a widening pool of borrowers and an unsustainable lending boom. Also, financial inclusion may reflect unregulated parts of the financial sector. Central banks and Superintendencies can contribute to favourable rules and regulations encouraging the creation of specialised providers or enabling existing ones to transform into regulated institutions.

From the studies reviewed, we can extrapolate those characteristics of the nature of financial inclusion that could endanger stability, as well as the regulation policies necessary to reduce those risks. First, some studies assert that it is easier to understand individual risks and prudential regulations of financial

inclusion institutions. They indicate, moreover, that regulations are easier to apply to those institutions than to traditional formal financial intermediaries. However, a major obstacle is the lack of information on financial inclusion institutions; in the majority of economies they are not regulated, and there is no regular and timely information about them (CGAP and BM 2012). There must exist sources of information on the activities they carry out, their weight within the financial system and their interconnectivity with the rest of the financial system, if we are to understand the true individual risks of each one and the regulations that must be applied.

Second, with regard to systemic risk - the interconnectivity of the financial system and the possibility of affecting its stability - some of the studies reviewed affirm that this type of risk is very low or non-existent for financial inclusion institutions. Nevertheless, as a result of the strong regulation that has been imposed on commercial banks since the recent financial crisis, the main bodies responsible for financial stability are beginning to warn of the possible emergence of regulatory arbitrage through these institutions (FSB, IMF and WB 2011). The majority of financial inclusion institutions carry out financial activities that take the place of bank credit, but within a regulatory framework that is much laxer than it is for formally-constituted banking institutions. They could endanger the financial system as a consequence of their ever-closer relationship with commercial banks. For example, banks work together with microfinance institutions, supporting them with significant injections of liquidity. The banking system has also established agreements with different businesses and points of sale, known as agent banking, in order to promote their points of access. All this lies behind the fact that some authors have begun to refer to these institutions as the *shadow banking* of emerging economies (Ghosh *et al* 2012; Roa and Warman 2015). This is a reflection of the fact that these institutions are interconnected with the banking system, but are subject to weaker or even non-existent regulation. This encourages the appearance of regulatory arbitrage, putting at risk the stability of the entire system.

However, the credit intermediation activities of shadow banking institutions in developed economies (securitisation, repurchase transactions (repos), hedge funds, exchange funds, Over-The-Counter (OTC) derivatives, etc.) are much more complex than that of financial inclusion institutions (Gertler *et al* 2012; Stein 2012; Gennaioli *et al* 2013). In order to study the possible interconnection of financial inclusion institutions with the financial system and the economy, it is necessary to start from the conceptual frameworks that consider the simplest characteristics of these intermediaries. The risks of financial inclusion institutions seem to be more closed to those associated to traditional banking systems; financial instability could derive from concentration risk, banking panic, and contagion among institutions. Therefore, traditional measures could be effective to mitigate the potential risks of the financial inclusion institutions: deposit guarantee funds, minimum capital requirements, in situ supervision, and restrictions in the relation between regulated and non-regulated financial institutions.

Third, the existence of a great number of distinct types of financial intermediaries can complicate the tasks of regulation and supervision of institutions at an individual level. Some countries have general regulations for all intermediaries; others have specific regulations for non-bank intermediaries. The data show that the majority of financial inclusion institutions fall outside the scope of state regulatory agencies (CGAP and WB 2010). It is very difficult to include all institutions within the same regulation and at the same time maintain a regulatory principle of proportionality. Taking into account the principle of proportionality, delegated supervision would seem to be the most recommendable alternative as, for example, in the case of federations and confederations for the supervision of cooperatives.

De la Torre *et al* (2012) explain how more intensive participation (the same existing intermediaries participate in a greater number of transactions) can increase social and moral hazard, by expanding the social costs of individual institutional imperfections. In this sense, more extensive participation (a greater number of financial intermediaries) could be more desirable if, as we have discussed, it is accompanied by an adequate regulatory and supervisory structure.

Fourth, financial innovation is a key component in increasing access to and use of financial markets. New financial instruments and intermediaries (agent banking, electronic payments, and transactions via mobile telephone, among others) reduce information and transaction costs, giving rise to a significant expansion of access to and use of financial products. The studies reviewed insist on the fact that the lack of regulation of these new instruments and intermediaries, or inappropriate regulation, can endanger financial stability. As the crisis demonstrated, finding a balance between innovation and stability is a challenge which all economies, as much developed as developing, must face. Although the innovations that gave rise to the crisis, and the risks they imply, are different from those associated with the financial innovations that are required by financial inclusion.

Concerning financial innovation risks, Rojas-Suarez (2015) calls attention to two specific risks: (a) the access of non-banks digital payments providers to banks' retail payments; and (b) the use of technological innovations to provide excessive credit to low income households and small firms. The author affirms that financial inclusion does not need to create systemic financial instabilities if the appropriate regulation, supervision and corporate governance practices are in place. The author presents an outline of the forthcoming Center for Global Development's Global Task Force Report, where three pillars are established for a regulatory framework: i) regulate by function rather than by institution, given the increasing difficulty in mapping a type of provider with a type of financial service; ii) follow a risk-based approach, which is crucial for financial inclusion, although missing in many national legislation; and iii) balance ex-ante and ex-post regulation. Excessive ex-ante regulation might discourage innovation and hinder development of emerging mar-

kets and services, but insufficient ex-ante regulation can risk the emergence of instabilities. The author suggests a balancing act: consistent with regulation by function and risk-based, the right mix depends on the service provided.

Finally, with respect to demand-side policies, it should be noted that several of the studies reviewed affirm that the behaviour of low-income clients or small businesses is more solid during financial crises. Programmes for financial education and financial consumer protection aimed at this public should focus in their early stages on increasing trust in and understanding of formal financial intermediaries, as well as different products. Moreover, financial inclusion is bringing in people who have never dealt with a financial institution, for whom some of the contracts written with densely worded legal jargon are unfamiliar. In this scenario, consumer protections and financial education programmes are essential.

5. CONCLUSIONS

Financial inclusion is increasingly becoming a priority for policymakers because of its possible effect on economic growth, inequality and stability. Understanding the effects of financial inclusion on these macroeconomic variables is essential to develop appropriate financial inclusion interventions.

In this study we have discussed the nexus between financial inclusion and stability from a comprehensive literature review. The analyses of the relationships continue to be works in progress, and more empirical studies to quantify and collect data for factors that affect these relationships are needed. Although some results are still inconclusive and preliminary, from the reviewed studies we can draw some conclusions. First, risk may rise from rapid credit growth associated with new financial inclusion institutions and instruments, and from unregulated parts of the financial system. On the other hand, broader access to deposits that lead to a more diversified base of deposits could significantly improve the resilience of the overall financial system and thus financial stability.

Second, the measures that should accompany greater access and use in order to prevent them from endangering stability, are related to those that were outlined after the crisis for the most advanced stages of financial development: prudential regulations, financial consumer protection policies and financial education. Nevertheless, the studies affirm that the risks and frictions associated with financial inclusion are different to and less pronounced than those associated with financial development in its most advanced stages. The application of standards and other measures that guarantee financial stability might prove to be a setback to the inclusion processes. In this regard, it is important to specify what type of state intervention or regulation is necessary in the particular case of financial inclusion, rather than automatically applying measures derived from the financial crisis. For example, taking into account the principle of proportionality, delegated supervision seems to be the most appropriate alternative, as in the case of federations and confederations

for the supervision of cooperatives.

Finally, in order to continue with a more detailed study of the links between financial stability and inclusion, we must start from the foundation of conceptual frameworks that allow us to analyse the distinct mechanisms proposed in the studies as ways in which financial inclusion could affect financial stability. The theoretical framework of traditional financial markets — according to which the intermediaries slowly eliminate agency frictions and transaction costs through their distinct functions — could be extended to give space to new, stability-endangering frictions related to greater access to and use of financial markets. Defining these risks clears the ground for a definition of concrete policies and measures, from both the demand and supply sides. Inclusion efforts are best targeted toward addressing (information and transaction cost) market failures, instead of a general increase in financial access. The studies suggest that it is preferable to enhance financial inclusion through interventions that increase supply by eliminating market imperfections (such as new lending technologies that reduce transaction costs or improved borrower identification that mitigate information costs) instead of reducing screening and monitoring standards that can have severely negative implications for financial stability. We hope that this paper lays a foundation for the development of these conceptual frameworks.

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ENDNOTES

1. Senior Researcher, Economic Research Department, Center for Latin American Monetary Studies, CEMLA. Durango 54, Mexico City, 06700 Mexico. E-mail: roa@cemla.org. I gratefully acknowledge valuable comments on earlier versions of the paper from two anonymous referees and from participants at the XIX Meeting of the Central Bank Researchers Network of the Americas, Mexico City, November 2014. I am also grateful to Angel Estrada, Oscar Carvallo and Fanny Warman for their comments and suggestions. I also thank Ignacio Garrón for his excellent research assistance. Finally, I acknowledge financial support from the "Instituto de Investigaciones Económicas y Sociales Francisco de Vitoria" (IIES), Madrid, Spain.

2. <http://fsi.imf.org/Default.aspx>

3. <http://data.worldbank.org/data-catalog/world-development-indicators>

4. <http://www.afi-global.org/afi-network/members>

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