Financial Inclusion in Asia

Issues and Policy Concerns

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Preface and Introduction

An integral component of financial sector development in Asia relates to the issue of financial inclusion. Several emerging market economies in the region have put in place a plethora of initiatives to expand provision of financial services to firms and households through allowing greater access to the formal credit market. While financial inclusion and financial deepening can promote economic growth and contribute significantly to denting poverty and inequality that is rampant in the region, there are also concerns that it could aggravate systemic risk and financial instability. Considering the important role played by banks in achieving financial inclusion, especially with bank-based financial systems dominating other forms of providers of financial services, a greater understanding of the issues and policy concerns emanating from the process of financial inclusion is of critical importance.

Financial inclusion can be said to encompass the process of broadening the accessibility of financial services for households and firms. In other words, it relates to providing and enabling the firms and households in an economy with access to the formal credit market. This is also sometimes referred to as banking sector "outreach," that is, the degree to which the banking sector is able to meet the needs of a large segment of the population. The prime objective for furthering financial inclusion is to minimize the share of individuals and firms who have been left out of financial services provision as a result of government failures or market imperfections.

In several emerging and developing economies, financial inclusion plays a pivotal role in fostering inclusive macroeconomic growth. Access to affordable financial services can potentially increase economic activities as well as employment opportunities for those left out by the formal financial system (households in rural segments especially) which could also translate into higher disposable incomes, higher degrees of savings and a diverse deposit base for banks. Greater financial inclusion is also important when viewed from the perspective of financial stability. Since financial inclusion tends to result in greater diversification of bank assets, it could potentially reduce the overall risk profile of the banks, which in turn adds an element of stability to the financial system.

Though financial inclusion has become very popular in the economic policy discourse in the region, there is no consensus on how to define financial inclusion and whether the existing definitions and measurements effectively capture the various dimensions. It must also be emphasized that most of the commonly available financial inclusion indicators such as those capturing physical outreach may not necessarily provide a holistic picture of financial inclusion. Information concerning the actual use of those financial services from the user-side, in addition to measuring the degree of financial exclusion (among women, for example), is an additional dimension that must be factored in while attempting to measure financial inclusion..

Further, despite the role it has come to occupy in the policy discourse, there is still a dearth of relevant academic literature that explores the inter-related issues concerning financial inclusion specifically in Asia. In this light, this book will examine some analytical and policy issues concerning various dimensions of financial inclusion in Asia.

The volume is broadly divided into three parts, with the first set of chapters focusing on the issue of measurement and determinants of financial inclusion in Asia. The second set of chapters comprises empirical essays exploring specific dimensions of financial inclusion and its implications on a larger set of macroeconomic and development issues. The volume then wraps up with a set of selected country case studies assessing the evolution of and policy framework pertaining to financial inclusion in emerging Asian economies. In what follows, we will offer a chapter-by-chapter synopsis below.

Part I—Measurement and Determinants

The first part of the book examines issues relating to measurement and the empirical determinants of financial inclusion in Asian economies.

Chapter 1 sets the tone for the rest of the book by focusing on the definitions of financial inclusion. An understanding of the interlinkages between financial inclusion, financial development, and economic growth require an appropriate measure of financial inclusion. While the existing literature has a set of indicators that either at the macro level or at the micro level provide interesting and useful information on the nature of inclusiveness of a financial system, there are serious limitations with the available measurements. When used individually, they may provide partial and incomplete information and may lead to a misinterpretation of the extent of financial inclusion in an economy. In this light, Chap. 1 develops an index of financial inclusion (IFI) and uses it to measure the level of financial inclusion for several Asian economies for 2004–2013.

Chapter 2 undertakes an empirical investigation of the determinants of financial inclusion in 12 Asian countries. Using data from the World Bank Global Findex database for 2011, the chapter considers three indicators of financial inclusion—namely, ownership of a bank account, savings on a bank account, and use of bank credit—to test the determinants of those three indicators. It specifically examines the influence of four individual characteristics—education, income, age, and gender—on the three indicators of financial inclusion. The empirical results suggest that there are large cross-country differences in financial inclusion and that ownership of a bank account is more common in high-income countries. However, the pattern of financial inclusion in terms of savings in a bank account or using formal credit differs across countries and is not related to per capita income. The chapter also argues that the empirical results are suggestive of many similarities across countries for the determinants of financial inclusion such as being older and better educated associated with higher values for the three financial inclusion indicators in most countries.

Part II—Financial Inclusion: Importance and Implications

The chapters in this part are empirical essays exploring specific dimensions of financial inclusion and its implications on a larger set of macroeconomic, development, and institutional policy issues.

Chapter 3 focuses on understanding the link between financial inclusion, poverty, and income inequality. The chapter empirically argues that greater financial inclusion will lead to a reduction of poverty incidence and income equality. It extends the existing literature on financial inclusion by focusing on developing Asian economies. To do this, the chapter constructs a new financial inclusion indicator to assess various macroeconomic and country-specific factors affecting the degree of financial inclusion for 37 selected developing Asian economies. The chapter then tests the impact of financial inclusion on poverty and income inequality. The results show that per capita income, rule of law, and demographic characteristics significantly affect financial inclusion in developing Asia. Furthermore, the chapter also finds that financial inclusion significantly reduces poverty and lowers income inequality.

A large share of population without access to the formal financial system is a common phenomenon in many emerging economies. Using cross-country data, Chap. 4 documents the relevance of this issue for emerging Asia and discusses some of the implications for monetary policy. The focus is on the effectiveness of interest rates as a policy tool, as well as implications for the targets of monetary policy. The econometric analysis unveils only small differences in the interest rate sensitivity of output for economies at different degrees of financial inclusion. The results also suggest that real policy rates in some economies in emerging Asia tend to move slightly more countercyclically against headline than core inflation. The latter finding is in line with recent theoretical literature on policy targets in an environment where the share of financially excluded households is large and food accounts for a considerable share of the consumption basket.

Part III—Financial Inclusion in Asia: Country Experiences

The final part of the book is a discussion of selected case studies of emerging Asian economies and their experience with different models of financial inclusion. The chapters provide an assessment of the financial inclusion initiatives undertaken by Indonesia, India, and Sri Lanka as representative examples, along with tracing the evolution of the policy framework pertaining to financial inclusion in these countries.

Chapter 5 argues that with limited facilities and limited financial access, Indonesia can expand its coverage of financial inclusion only by building a model through innovative banking. This chapter shows that with high penetration of mobile banking, a branchless banking (agent banking) model with digital financial services is suitable. Massive regulatory intervention is required to get this model to work, requiring the government's social assistance program to jump start the model with around 15.5 million households being directly exposed to digital financial services.

The next case study covered in Chap. 6 is Sri Lanka, which is home to a large number of financial institutions, both formal and semiformal, providing a range of different financial services such as loans, savings, leasing and finance, and pawning facilities to its population. There is also evidence of increasing access and utilization of financial services by various segments of its population. However, there are multiple challenges facing the country in terms of achieving greater financial inclusion. This chapter undertakes a household level analysis of financial inclusion in Sri Lanka. It does so by looking at the extent to which households have accessed financial institutions for loans and savings, extent of multiple borrowing and multiple savings as well as the reasons for accessing multiple financial institutions for loans and savings. The chapter concludes by highlighting a number of issues policymakers should address for achieving greater financial inclusion in Sri Lanka.

The final chapter of the book deals with the microfinance industry in India. The microfinance industry in India is one of the largest in the world and has played a critical role in fostering financial inclusion in the country. Though its roots can be traced back at least to the 1970s,

it exploded in size and reach since the 1990s. The trends highlight that since the 1990s microfinance has largely been clustered in the Southern Indian region and already witnessed a regulation-induced crisis in 2010. The self-help group-bank linkage model and the microfinance institutions model have provided two alternative routes in the sector with the latter starting late but showing spectacular growth before getting caught in the crisis. While the sector has rebounded from a crisis mode, several challenges still remain. The chapter provides an overview of the microfinance movement in India, underlining its role in the broader financial inclusion challenge in the country. The chapter also analyzes the key forces and determinants of the microfinance movement in India as well as the lessons that other emerging market economies in the region can derive from it.

To conclude, this book brings together a set of analytical and empirical essays aimed at understanding financial inclusion in emerging markets with a focus on the Asian region. These are carefully selected papers that were presented at an international conference in Hong Kong. Despite the significant policy interest in the issue of financial inclusion especially in Asia, there is a dearth of academic literature on the topic. This book aims to fill the gap by being the first of its kind to address the relevant issues and policy concerns relating to financial inclusion. One of the distinguishing features of the book is that it brings together a mixture of empirical and case study-oriented essays. While the chapters in this volume have been written in a manner that can stand up to academic scrutiny, they are also meant to be accessible to researchers, students, policy makers, and practitioners interested in the field of financial inclusion and development, especially in Asia.

Sasidaran Gopalan
Tomoo Kikuchi

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Part I

Measurement and Determinants

1

Measuring Financial Inclusion for Asian Economies

Mandira Sarma

Introduction

Asian economies are at different levels of economic and financial sector development. While Japan, Singapore, and the Republic of Korea belong to the high-income Organisation for Economic Co-operation and Development (OECD) group of countries, on the other end of the wide spectrum are low-income countries that include Cambodia, Nepal, and Bangladesh. Within the middle-income countries of Asia, there are countries such as Malaysia and the Maldives that are far better off than Pakistan and India. The various stages of economic development are also reflected in the diverse stages of financial sector development in these economies. While the literature on economic development has adequately discussed the link between financial sector development and

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economic development,[1] there has not been much discussion of whether financial development implies financial inclusion. Financial inclusion can be defined as a process that ensures the ease of access, availability, and usage of the formal financial system for all members of an economy. It has been observed that even 'well-developed' financial systems have not succeeded in being 'all-inclusive', and certain segments of the population remain outside the formal financial systems.[2]

An understanding of the issues surrounding inter-linkages between financial inclusion, financial development, and economic growth requires an appropriate measure of financial inclusion. In other words, measuring is the first step towards understanding financial inclusion. In this chapter, we use an index of financial inclusion (IFI), discussed in detail in Sarma (2012, 2015), to measure the level of financial inclusion for several Asian economies. We use the United Nations Development Programme (UNDP) definition of Asia here.[3] We compute IFI for as many Asian countries as possible for the years 2004–2013, subject to the availability of relevant data. Our results show that countries of the Asian region are at different levels of financial inclusion. While Japan, the Republic of Korea, Malaysia, Turkey, and Brunei Darussalam have achieved a high level of financial inclusion, countries such as Afghanistan, Myanmar, Syria, and Yemen display abysmal levels of financial inclusion, as indicated by their extremely low IFI values. On average, Asian countries as a whole displayed a medium level of financial inclusion for 2013, the latest year for which data are available. If we group these Asian countries into eastern, western, central, and southern regions, we find that eastern Asia is more financially inclusive than other regions, while financial inclusion is the least in South Asia vis-à-vis others. These measures not only provide us with a snapshot of the status of financial inclusion in the countries of these regions, they also serve as important quantitative tools to compare the status across economies and over time. These measures of financial inclusion can further be used for empirical research on interesting issues on financial inclusion.

[1] See, for example, Levine (1997) for a survey of this debate.

[2] See, for example, Kempson et al. (2004).

[3] The UNDP classification of countries is available at http://www.unep.org/tunza/tunzachildren/downloads/country-Classification.pdf, last accessed in May 2015.

In this chapter, our focus is mainly to quantify the level of financial inclusion in the countries under consideration. In doing so, we discuss some conceptual issues involved in measuring financial inclusion and defining the IFI. While we do not delve in a rigorous empirical analysis of what makes some countries more financially inclusive than others, we provide a brief statistical analysis of the levels of financial inclusion and some variables related to the banking structures in these countries.

The chapter is organised as follows. In 'Defining and Measuring Financial Inclusion: A Brief Review', we review the literature on what defines financial inclusion and the various attempts at measuring financial inclusion. In 'Index of Financial Inclusion', we discuss the IFI. Section 'Index of Financial Inclusion for Asian Economies' presents some technical details on various dimensions of financial inclusion and data used for this chapter. In 'IFI for Asian Countries, 2004–2013', we present the IFI values computed for Asian economies for which necessary data were available, and also provide some analysis on these measures. Section 'Conclusion' concludes the chapter.

Defining and Measuring Financial Inclusion: A Brief Review

Financial inclusion (or, alternatively, financial exclusion) has been defined in the context of a larger issue of social inclusion (or exclusion) in a society. It is generally observed that financially excluded people also suffer from some form of social exclusion, at different levels. One of the early attempts to define financial exclusion was by Leyshon and Thrift (1995) who defined it as referring to those processes that prevent certain social groups and individuals from gaining access to the formal financial system. Sinclair (2001) defined financial exclusion as the inability to access necessary financial services in an appropriate form, owing to a variety of reasons such as difficulties associated with access, conditions, prices, marketing, or self-exclusion in response to negative experiences or perceptions. The Government of India's 'Committee on Financial Inclusion in India' defines financial inclusion 'as the process of ensuring access to financial services and timely and adequate credit where needed by vulnerable groups, such as the

weaker sections and low-income groups at an affordable cost' (Rangarajan Committee 2008, p. 1). All these definitions, conceptual as well as functional, indicate that financial exclusion is a manifestation of social exclusion, mainly among people who are at the margins of the society.

Scholars have attempted to measure financial inclusion in a various ways. Some studies sought to measure financial inclusion by simply measuring the proportion of adult population or households of an economy having access to formal financial services (e.g., having a bank account). The disadvantages with this approach to measuring financial inclusion are many. First, such a measure can be obtained only through countrywide primary surveys, as banks normally do not provide information on their number of clients; in general banks and banking regulators disclose the number of bank accounts held in the banks. Therefore, in order to obtain a measure of the proportion of people with a formal bank account, one has to resort to data from specifically designed primary surveys. Such surveys on access to financial services have been conducted only in a limited number of countries, thus making it difficult to obtain such a measure of financial inclusion for countries where such surveys are not conducted.[4] Even with the limited number of countries where such primary surveys are conducted, there are bound to be differences in survey methodologies, survey units (individual vis-à-vis households), and dates of surveys—making the measure inconsistent and incomparable across countries. The recent Global Findex[5] data from the World Bank may eventually reduce many such inconsistencies relating to survey-based data, however, at present, researchers are handicapped by the shortcomings of survey data. Honohan (2008) has made an attempt to combine survey-based information and secondary data on the number of bank accounts, and econometrically estimated the proportion of households/adults having access to financial services for as many as 160 countries. Despite several limitations, these estimates provide interesting information; however, they

[4] Some of the countrywide surveys of access to financial systems are the Finscope surveys for African and some Latin American countries and the Eurobarometer surveys for the European countries. Honohan (2008) gives a list of the countries for which such surveys are conducted.

[5] While its worldwide coverage of Global Findex database is impressive, the sample for individual countries is small; for example, the samples for India and China are only about 0.0004 % of their respective adult populations. For more on this database, see Demirguc-Kunt and Klapper (2012).

provide only a one-time measure of financial inclusion, and are not useful for understanding the changes over time and across countries.[6]

Financial inclusion is a multidimensional process. Financial exclusion can come about in several forms, vis-à-vis, *access exclusion* (e.g., exclusion due to remoteness of financial services or due to the process of risk management of the financial system), *condition exclusion* (e.g., exclusion due to conditions that are inappropriate for some people), *price exclusion* (e.g., exclusion due to unaffordable prices of financial products), *marketing exclusion* (e.g., exclusion due to targeted marketing of financial products), and *self-exclusion* (e.g., when some people exclude themselves from the formal financial system owing to fear of refusal or due to other psychological barriers) (Kempson and Whyley 1999a, b). Even if a person may have a bank account, he or she may suffer from any of the above forms of financial exclusion. Therefore, a measure of financial inclusion that is based on the proportion of adults/households with a bank account ignores some important aspects of an inclusive financial system, and these relate to quality and usage of the financial services. Kempson et al. (2004) pointed out that merely having a bank account may not imply that the account is used adequately. In many countries, people having a bank account do not use them enough due to remoteness of bank branches, or other physical or psychological barriers. An interesting case study by Diniz et al. (2012) illustrated how the 'banked people' (e.g., people having a checking or sav-

[6] Honohan (2008) uses a regression-based method to estimate these measures for countries where survey-based information is not available; in countries where survey-based information on percentage of adults/households with access to financial services is available, that information is taken directly. These estimates suffer from several limitations some of which are mentioned by the author himself. The first limitation regards the inconsistencies of the survey dates and survey units. The country surveys used in the estimation pertain to different points of time, so there is an inconsistency regarding the date. Further, some of these surveys have adult individuals as the unit (such as the Eurobarometer surveys) while others have households as their unit (like the Finscope surveys). Honohan (2008) uses both interchangeably, simply by stating that "*the difference may not be all that great*", although there are reasons to believe otherwise. While estimating the proportion of adults/households with access to financial services, the author uses a log-linear relationship between proportion of financially included adults/households and the number of bank accounts (including number of microfinance accounts). This log-linear relationship is justified by a good fit of this relationship for only 13 countries for which both survey-based proportion of financially included adults/households and number of accounts (bank and microfinance institutions) data are available. However, as in any econometric exercise, such a relationship may not hold true if the data set changes due to a change in the period and/or a change in the number of countries. Thus, these estimates are not easily amenable to computing on a periodic basis to compare financial inclusion over time and across countries.

ings account) of Autazes (an Amazon county) found it extremely expensive and time consuming to use their bank facilities before 2002 when banking facilities were not locally available, and how as a consequence of this remoteness, the people of Autazes were financially excluded, in spite of having bank accounts. A measure of financial inclusion that only counts the number of people having a bank account will not reflect the lack of adequate financial services as in the case of Autazes before 2002. Further, adequate use of financial services is also an important aspect of financial inclusion. Kempson et al. (2004) defined the notion of "underbanked" or "marginally banked" people as those who do not make adequate use of their bank accounts, despite having bank accounts. In a large household level survey of low-income households in Washington, DC, Los Angeles, and Chicago in the United States of America, Seidman et al. (2005) reported that two-thirds of the 'banked population' were using informal non-bank services, ranging from "*buying money orders and sending remittances from other than a bank to using payday lenders, pawn shops and auto title lenders as primary sources of credit*" (Seidman et al. 2005, p. 4). Thus, in spite of having a bank account, these households were not using the banking facilities and were in fact using informal financial services. These households form a part of the so-called 'underbanked' or 'marginally banked' households, which has been discussed in the literature as equivalent to being financially excluded households. This emphasises "usage" as another dimension of financial inclusion.

Thus, any attempt at measuring financial inclusion must take into account the various dimensions of financial inclusion. A measure of financial inclusion based on the proportion of "banked" adults, thus measures only one aspect of financial inclusion, vis-à-vis, access to financial system, and ignores other important aspects, such as availability and usage of the financial system. While access to financial institutions is the primary dimension of financial inclusion, an inclusive financial system is also the one in which financial services are adequately available and used.

An alternate approach, as used by financial regulators of many countries, is to use a variety of indicators of financial sector outreach to take stock of the state of financial inclusion. The most commonly used indicators are number of bank accounts (per 1000 adults), number of bank branches (per million people), number of automated teller machines (ATMs) (per

million people), amount of bank credit, and amount of bank deposits. In Beck et al. (2007), other indicators of banking sector outreach have been used—geographic branch penetration, loan and deposit accounts per capita, loan-income and deposit-income ratios, and so on.[7]

These indicators do provide interesting and useful information on the nature of inclusiveness of a financial system, covering a wide range of dimensions of financial inclusion. However, when used individually, they may provide partial and incomplete information on the inclusiveness of the financial system. Using individual indicators may also lead to a misinterpretation of the extent of financial inclusion in an economy as seen from the example in Table 1.1.

In Table 1.1, bank level indicators of financial inclusion are provided for a select group of countries. Among the countries shown, Malaysia has a higher number of bank accounts per 1000 adults than Thailand and Lebanon but a lower number of bank branches per 100,000 adults compared to Thailand, and a smaller volume of bank deposits as a pro-

Table 1.1 Indicators of financial inclusion for select countries

Commercial bank data, 2013				
Country	No. of bank A/C (per 1000 adults)	No. of bank branches (per 100,000 adults)	Domestic credit (as % of GDP)	Domestic deposit (as % of GDP)
Japan	7260.0	33.8	31.3	141.1
India	1197.6	12.1	55.1	69.9
Lebanon	1408.8	30.0	96.6	250.8
Malaysia	2528.1	11.3	121.6	119.5
S. Korea	5225.1	18.3	90.7	79.4
Nepal	478.9	8.5	49.3	82.5
Thailand	1509.8	12.1	82.1	84.1

Source: Financial Access Survey, IMF

[7] The Reserve Bank of India reports population per bank branch, population per ATM, percentage of population having bank deposit accounts, credit to GDP ratio etc. to report on the progress of financial inclusion in India. In 2010, the Superintendence of Banking, Insurance Companies and Private Pension Funds of Peru began to develop a set of financial inclusion indicators, with an objective of providing information on access and use of financial products and services. These indicators include number of branches, ATMs and agents per 100,000 adults and per 1000 sq. km., number of depositors and borrowers per 100,000 adults, average size of deposit and credit as a ratio of GDP per capita etc.

portion of GDP compared to Lebanon. As seen in these examples, any one indicator fails to adequately capture the extent of financial inclusion. Thus, a comprehensive measure, such as the index of financial inclusion (IFI) used in this chapter, is required. The IFI (Sarma 2012, 2015) is a comprehensive measure of financial inclusion that incorporates information on several aspects (dimensions) of financial inclusion in one single number.[8] We discuss this measure in the following section.

Index of Financial Inclusion (IFI)[9]

As we pointed out earlier (Sarma 2008, 2010, 2012, 2015), an appropriate measure of financial inclusion should incorporate information on as many aspects (dimensions) of financial inclusion as possible, should be easy and simple to compute, and therefore be comparable across countries over time. From a theoretical point of view, such a measure should also satisfy some important mathematical properties, vis-à-vis, boundedness, unit-free property, homogeneity, and monotonicity. The IFI satisfies these criteria (Sarma 2012). The IFI is elaborated below.

Methodology

A multidimensional approach is followed while constructing the IFI. This multidimensional approach is similar in spirit to UNDP's approach of computation Human Development Index (HDI), the Human Poverty Index (HPI), the Gender Development Index (GDI) and so on. As in the case of these UNDP indexes, the IFI is computed by first computing a dimension index for each dimension of financial inclusion. The dimension index d_i, as computed by the formula (1.1), measures the country's achievement in the ith dimension of financial inclusion. A weight

[8] The IFI was first proposed in Sarma (2008). Sarma (2010) modified the methodology. In Sarma and Pais (2011) the modified IFI was used to identify country specific factors associated with financial inclusion. Subsequently, the methodology was further improved in Sarma (2012), replacing all previous versions of the IFI. For a discussion on the improved IFI, see Sarma (2015).

[9] This section is largely drawn from Sarma (2012).

w_i such that $0 \le w_i \le 1$ is attached to the dimension i, indicating the relative importance of the dimension i in quantifying the inclusiveness of a financial system.

$$d_i = wi \frac{A_i - m_i}{M_i - m_i} \tag{1.1}$$

where

w_i = weight attached to the dimension i, $0 \le w_i \le 1$

A_i = actual value of dimension i

m_i = lower limit on the value of dimension i, fixed by some pre-specified rule.

M_i = upper limit on the value of dimension i, fixed by some pre-specified rule.

The choice of m_i and M_i used in this chapter is discussed in section 'Choice of M_i and m_i for Dimension Indexes'.

Formula (1.1) ensures that $0 \le d_i \le w_i$. The higher the value of d_i, the higher the country's achievement in dimension i. If n dimensions of financial inclusion are considered, then, a country's achievements in these dimensions will be represented by a point $X = (d_1, d_2, d_3, \ldots, d_n)$ on the n-dimensional space. In the n-dimensional space, the point $O = (0,0,0,\ldots,0)$ represents the point indicating the worst situation while the point $W = (w_1, w_2, \ldots, w_n)$ represents an ideal situation indicating the highest achievement in all dimensions. The location of the achievement point X vis-à-vis the worst point O, and the ideal point W is the crucial factor in assessing a country's level of financial inclusion. The larger distance between X and O would indicate higher financial inclusion, and the smaller distance between X and W would indicate higher financial inclusion. In the n-dimensional space, it is possible to have two points having the same distance from W but different distances from O, and vice versa. Thus, two countries can have their achievement points at the same distance from one of these points but have different distances from the other point. If two countries have their achievement points at same distance from W but different distances from O, then

the country with higher distance from O should be considered more financially inclusive; while if they have the same distance from O but different distances from W, then the country with less distance from W should be considered more financially inclusive. While developing a measure of financial inclusion, both these distances should be taken into account. In IFI, we use a simple average of the Euclidian distance between X and O, and the inverse Euclidian distance between X and W. Both of these distances are normalized by the distance between O and W to make them lie between 0 and 1. In computing the simple average between the distances, the inverse distance between D and W is considered. This ensures that the IFI is a number that lies between 0 and 1 (e.g., the index has well defined bounds), and is monotonically increasing, for example, the higher level of financial inclusion indicates higher value of the index. Thus, to compute IFI, first we compute X_1 (distance between X and O) and X_2 (inverse distance between X and W), and then take a simple average of X_1 and X_2 to compute IFI, the final index. The exact formulae are given below

$$X_1 = \frac{\sqrt{d_1^{\,2} + d_2^{\,2} + \ldots + d_n^{\,2}}}{\sqrt{\left(w_1^{\,2} + w_2^{\,2} + \ldots + w_n^{\,2}\right)}} \tag{1.2}$$

$$X_2 = 1 - \frac{\sqrt{\left(w_1 - d_1\right)^2 + \left(w_2 - d_2\right)^2 + \ldots + \left(w_n - d_n\right)^2}}{\sqrt{\left(w_1^{\,2} + w_2^{\,2} + \ldots + w_n^{\,2}\right)}} \tag{1.3}$$

$$\text{IFI} = \frac{1}{2}\left[X_1 + X_2\right] \tag{1.4}$$

The formula (1.2) for X_1 gives the normalised Euclidean distance of X from the worst point O, normalised by the distance between the worst point O and the ideal point W. The normalisation is done to make the value of X_1 lie between 0 and 1, and the higher value of X_1 implies more financial inclusion.

The formula (1.3) for X_2 gives the inverse normalised Euclidean distance of X from the ideal point W. In this, the numerator of the second component is the Euclidean distance of X from the ideal point W,

normalising it by the denominator and subtracting by 1 gives the inverse normalised distance. The normalisation is done to make the value of X_2 lie between 0 and 1, and the inverse distance is considered so that a higher value of X_2 corresponds to higher financial inclusion.

The IFI formula (1.4) is a simple average of X_1 and X_2, thus incorporating distances from both the worst point and the ideal point.

For simplification, if we consider all dimensions to be equally important in measuring the inclusiveness of a financial system, then $w_i = 1$ for all i. In this case, the ideal situation will be represented by the point $W = (1,1,1,\ldots,1)$ in the n-dimensional space and the formula for IFI will be

$$\text{IFI} = \frac{1}{2}\left[\frac{\sqrt{d_1^2 + d_2^2 + \ldots + d_n^2}}{\sqrt{n}} + \left(1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \ldots + (1-d_n)^2}}{\sqrt{n}}\right)\right] \tag{1.5}$$

In Fig. 1.1, a graphical explanation of the IFI is provided with the help of the three dimensions used to construct the index in this chapter. As discussed in the next section, we consider three dimensions of financial inclusion in this chapter—accessibility (or financial sector penetration), availability, and usage of the financial system. In Fig. 1.1, each of these dimensions is represented by an axis in the three-dimensional space. The point $W = (w_1,w_2,w_3)$ represents the ideal point, and a particular country's achievements in these dimensions is depicted by the point $X = (p,a,u)$. A country that has an inclusive financial system should be closer to the ideal point W than a country that is less financially inclusive. Similarly, a country with a more financially inclusive system should be farther away from the point O than a less inclusive country. In other words, less distance between the points X and W, and more distance between X and O will together indicate high financial inclusion in country X. In the IFI formula, the normalised distance between X and O is given by the X_1 in formula (1.2), and that between X and W is given by the second component in formula (1.3). The normalised distance between X and W

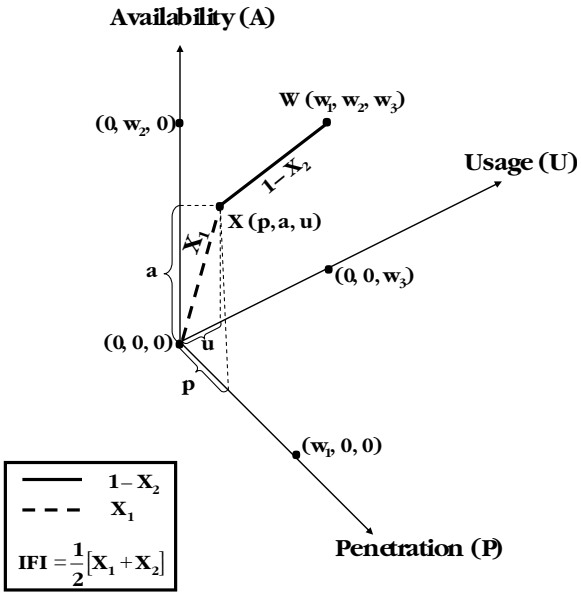

Fig. 1.1 Graphical explanation of a 3-dimensional IFI.
Source: Author's own

is a number that lies between 0 and 1, and if X has a highly financially inclusive system, then this normalised distance will be close to 0. While computing the IFI, the inverse normalised distance between X and W, computed as 1 minus the normalised distance is considered. This is given by X_2 in formula (1.3), and this ensures that less distance between X and W implies high financial inclusion. The final index is computed by taking an average of X_1 and X_2.

Although the IFI proposed here follows a multidimensional approach of index construction similar to the UNDP approach, there is a major difference in the manner in which dimension indexes are combined to compute the final index. Unlike the UNDP's methodology of using an average of the dimension indexes,[10] our index is based on a notion of

[10] Until 2011, UNDP used a simple arithmetic average to compute Human Development Index (HDI), Gender-related Development Index (GDI), and Gender Empowerment Measure (GEM) and a geometric average for computing Human Poverty Index (HPI). In 2011, it revised the methodology for HDI by using geometric mean instead of an arithmetic mean. The Human Development

distance from worst and ideal situations.[11] UNDP's methodology of using an average of dimension indexes suffers from the criticism that such averaging implies 'perfect substitutability' across dimensions; for example, an increase in one dimension can be compensated for by a decrease of equal (in case of arithmetic average) or proportional (in case of geometric average) magnitude in another dimension. As all dimensions are assumed to be equally important for the overall index value, the perfect substitutability can hardly be appropriate (Desai 1991; Trabold-Nubler 1991; Luchters and Menkhoff 1996; Sagar and Najam 1998). The distance based approach does not suffer from this shortcoming.

The IFI so defined, can be used to measure financial inclusion at different time points, and at different levels of economic aggregation (village, province, state, nation, and so on). It can be constructed at a macro level as well as at a micro level, depending on the availability of data, and the purpose of the research.

Index of Financial Inclusion for Asian Economies

With the above discussion on the general methodology of IFI, we now discuss computing IFI for those Asian economies for which data are available. For quantifying various dimensions for computing the IFI, we use data on various indictors from deposit banks and mobile money service providers. Deposit banks include commercial banks and other deposit-takers. These are defined as *'all resident financial corporations and quasi-*

Report 2011 (UNDP 2011) also computes other indices like Inequality-adjusted HDI (IHDI), Gender Inequality Index (GII) and Multidimensional Poverty Index (MPI) that adopt combinations of arithmetic and geometric averages (see e.g. UNDP 2011).

[11] This is similar to the "method of displaced ideal" of Zeleny (1974) in the context of multi-objective optimization programming. In the method of displaced ideal, only the displacement from the ideal point is considered. However, we consider displacement from both the ideal and worst points to compute our IFI, and this makes it somewhat different from the "method of displaced ideal". The IFI presented in Sarma (2008, 2010) and Sarma and Pais (2011) was based on the distance from the ideal only. This version, presented in Sarma (2012, 2015) incorporates the distance from both the ideal and worst points; thus the present IFI is an improvement over the earlier one and replaces the earlier versions.

corporations (except the central bank) that are mainly engaged in financial intermediation and that issue liabilities included in the national definition of broad money. These institutions have varying names in different countries, such as savings and loan associations, building societies, credit unions and credit cooperatives, post office giro institutions, post office savings banks, savings banks, microfinance institutions, etc.' [International Monetary Fund (IMF) 2015, p. 5]. MMSP are defined as *telecommunication companies or any other entity that partners with mobile phone operators to offer financial services to clients through agents independent of the traditional banking network* (IMF 2015, p. 10).

The main source of the data used here is the Financial Access Survey (FAS) database from the International Monetary Fund (IMF). This database disseminates annual data on indicators of geographic and demographic outreach of financial services for 160 respondent countries for the period 2004–2013. The FAS database released its first set of data in 2010, and since then data have been regularly updated and revised.[12]

We follow Sarma (2012, 2015), and consider three basic dimensions of an inclusive financial system in the construction of IFI. These three dimensions are banking penetration (BP), availability of the banking services (BS), and use of the banking system (BU). These dimensions are largely motivated by availability of relevant and consistent data for a large number of countries to compute comparable IFI. The following discussion on the dimensions of financial inclusion and the technical aspects of determination of benchmarks (upper bounds for the dimensions) as well as fixation of dimension weights is mainly drawn from Sarma (2012).

[12] The FAS database is an outcome of the initiatives of 'United Nations (UN) Advisors Group on Inclusive Financial Sectors', established by the UN in 2006, which decided, in 2008, to involve the IMF and the World Bank in collecting data on access to finance in order to support policy formulation and research. The initial funding for collection of the data was provided by the Government of the Netherlands. In June 2010, the IMF came out with annual data on several indicators of access to finance for the years 2004–2009 on its website. The data used in this chapter was extracted from the website http://data.imf.org/?sk=E5DCAB7E_A5CA_4892_A6EA_598B5463A34C, last accessed in April 2015.

Banking Penetration (Dimension 1)

An inclusive financial system should have as many users as possible, that is, an inclusive financial system should penetrate widely amongst its users. The size of the 'banked' population, for example, the proportion of people having a bank account is a measure of the banking penetration of the system. Thus, if every person in an economy has a bank account, then the value of this measure would be 1. However, data on the number of 'banked' people is not readily available, and in the absence of such data, we use the number of deposit bank accounts per 1000 adult population as an indicator of this dimension.[13] The number of deposit bank accounts per adult, and the proportion of banked adults can be expected to be positively correlated, and that can justify using the number of deposit accounts per 1000 adults as a proxy for the number of banked adults.[14] For the penetration dimension, we use data on deposit accounts per 1000 adults from the following deposit takers: commercial banks, credit unions/cooperative banks, and deposit taking microfinance institutions (MFIs). In addition to these, we also use the data on number of registered "mobile money accounts" per 1000 adults in our measure of banking penetration.

Availability of Banking Services (Dimension 2)

In an inclusive financial system, banking services should be easily available to the users. Indicators of availability are banking outlets (offices, branches, ATMs, and so on), therefore, the availability of services can be indicated by the number of bank outlets (per 1000 population) and/or by the number of ATMs per 1000 people. In the present day banking system in many countries, ATMs play an important role. Besides giving customers their bank account details, and allowing the deposit

[13] There may be persons having more than one bank account co-existing with others who may have none. Therefore, number of accounts per capita, is likely to actually provide an overestimation of the proportion of the "banked" population. For example, in 2010, number of bank accounts per 1000 adult people is 2276 in Malaysia, 1324 in Romania, and 1066 in India; this is despite the fact that a significant proportion of population is without bank accounts in these countries.

[14] In this context, it may be noted that Honohan (2008) found a positive and significant association between proportion of banked adults/households and number of bank accounts per 100 adults.

and withdrawal of cash and cheques (traditional teller services), ATMs in some instances also perform other functions such as providing bill payment services, and credit card related services. Thus the importance of ATMs in providing improved access to banking services is undeniable. However, the spread of the ATM network varies from bank to bank, and from country to country, and the role of a bank branch remains. In many countries, mobile money service providers (MMSP) have come up in a big way to bridge the gap in outreach for the financially excluded people who can use MMSP for the purpose of payments and remittances. An MMSP agent is a person, quasi-corporation, corporation, or machine that facilitates mobile money transactions, and customer support. It can thus be regarded on par with a bank branch as far as provision of financial services is concerned. In the present index, we use data on the number of bank branches, number of registered MMSP agents, and number of ATMs per 100,000 adults to measure the availability dimension. Two separate indexes are calculated: one for branches (comprised of bank branches and mobile money agent), and the second one for ATMs. Then, a weighted average of these two indexes, using two-thirds weight for bank branch index, and one-third weight for ATM index is considered as the index for the availability dimension.[15]

Keeping in view the move towards electronic banking in many countries, data on availability of electronic/internet based banking services should also be incorporated in this dimension. However, due to lack of consistent data on volume/number of electronic banks for all countries, we cannot incorporate electronic/internet based financial services from the availability dimension.

[15] The choice of these weights is motivated by an empirical observation of our data set. In our data set covering 2004–2010, the average ratio of ATM-to-branch per 100,000 adults is found to be 2.13. Thus, on average, there are two ATMs per bank branch, implying that a bank branch, on an average, is equivalent to two ATMs. Thus, the branch index gets a weight of two-thirds and the ATM index gets a weight of one-third in the availability index.

Usage (Dimension 3)

This dimension is motivated by the notion of 'underbanked' or 'marginally banked' people, as observed by Kempson et al. (2004). They have observed that *'in some apparently very highly-banked countries, a number of people with bank account are nonetheless making very little use of the services on offer…'* (Kempson et al. 2004, p. 13). These people are termed 'underbanked' or 'marginally banked'. These underbanked people, despite having access to the formal financial services, are unable to use the financial services, due to various reasons such as remoteness of banking outlets, unaffordable conditions attached to financial services, or simply due to negative experiences with the service provider. These factors reflect negatively on the inclusiveness of a financial system. Thus, merely having a bank account is not enough for an inclusive financial system; it is also imperative that the banking services are adequately used. The utilisation can be in many forms—for credit, deposit, payments, remittances, transfers etc. So, the usage dimension should include measures on all these different forms. In the usage dimension of IFI, we use the following indicators: total volumes of credit, deposit, and mobile money transactions as percentage of GDP. The appropriate indicators for credit and deposit would be the volume of credit and deposit to adult individuals as a proportion of GDP. Such data are, however, currently not available. Data on credit and deposit to the household sector are available for a few countries. Relying on them would greatly reduce the coverage of the present study. Hence we use the data on volume of credit to the private sector, and deposits mobilized from the private sector as a proportion of the country's GDP to measure this dimension.[16]

[16] In the literature on the role of finance in economic development, the credit to GDP and deposit to GDP ratios indicate what is known as "financial depth". In this literature, indicators of financial depth provide a measure of the contribution of the financial system in economic activities. Here, however, we are using these ratios to indicate the volume of credit and deposit generated by the banking system as a measure of the extent of the usage of the banking system due to lack of data on more appropriate measure on this.

Choice of M_i and m_i for Dimension Indexes

Computation of the IFI requires a-priori fixing the value of M_i (upper limit) and m_i (lower limit) for each dimension, so that the dimension indexes are normalised to have values between 0 and w_i. Further, it is necessary to keep the values of M_i and m_i fixed for different years so that IFI computed for different years and countries are compared with respect to the same benchmarks on various dimensions. While one can safely choose 0 as the lower bound for all the dimensions discussed above, it is not so easy to fix the upper bound of a dimension, since theoretically it is not possible to arrive at a 'maximum' or even an 'optimum' level of achievement for a dimension of financial inclusion. Analytically, and using an objective and straightforward methodology, the empirically observed highest value of a dimension can be considered as the upper limit for it.[17] However, this may cause two problems. First, if the empirically observed highest value happens to be 'an outlier', then it will distort the scale of the index, driving the IFI values of all other countries down, even though their performance may be reasonable. This is because all countries will be compared vis-à-vis the outlier country. The second problem caused by using the empirically observed highest value as the upper bound is that this value may be different for different years, and hence comparing the index across time will be difficult. In view of these observations, we consider the following upper bounds to be reasonable for different dimensions:

M_p = upper limit for computing dimension index for penetration dimension = 2500 (indicating on an average of at least two deposit accounts per adult).[18]

M_{a1} = upper limit for computing first index of availability dimension = 60 (indicating about 1667 clients per bank branch).[19]

[17] For example, the UNDP uses the empirically observed highest observed value as the maximum while computing dimension indexes for the Human Development Index (HDI) (UNDP 2011).

[18] Ardic et al. (2011) estimated that on average, an individual has three deposit accounts in the world. Our choice of *Mp* is informed both by our data set and the estimates from Ardic et al. (2011). In our dataset, this represents the 90th percentile on the distribution for this dimension.

[19] In our data set this again represents about the 90th percentile on the distribution for this dimension.

M_{a2} = upper limit for computing second index of availability dimension = 120 (indicating one ATM per 833 adults).[20]

M_p = upper limit for computing dimension index for usage dimension = 300 (indicating a credit + deposit to GDP ratio of 3).[21]

If a country has a dimension value higher than these upper bounds, then it is set equal to the upper bound. By setting the upper limits as above, we avoid comparing countries against excessively high benchmarks, and thus remove outliers and smooth the value of the index at the upper level.

Weights Assigned to the Dimensions

Assigning appropriate weights to the dimension indexes is difficult. While all the three dimensions considered here are equally important for an inclusive financial system, the lack of adequate data on important indicators that completely characterise the availability and usage dimensions renders relatively less weight to these dimensions in the present index. As far as availability of banking services is concerned, it may be noted that many countries have moved towards internet banking, thus reducing the importance of physical bank outlets. Some countries also offer banking services through telephones. Thus, using data only on physical outlets (such as bank branches, mobile agent outlets, and ATMs) can give an incomplete picture of the availability of banking services. Similarly, data on credit, deposit, and mobile transactions can only partially depict the usage of the financial system as other services of the banking system, such as payments, transfers, and remittances are not included. In the absence of such data, a complete characterisation of these dimensions is not possible. Therefore, until the time data on all indicators of availability and usage are available, we give relatively less weight to these two dimensions. In the present IFI, we have provided the following weights: 1 for

[20] In our dataset for 2004 to 2010, we find that the average number of ATMs per bank branch is about 2.13. Our choice of a maximum for ATM (120) being twice the maximum for bank branches (60) is motivated by the above empirical observation. This is about the 92nd percentile observed in the distribution for the ATM dimension.

[21] This represents about 90th percentile observed in the distribution for the usage dimension.

the index of banking penetration, 0.5 for the index of availability, and 0.5 for the index of usage.[22]

Given these weights, we can represent a country K by a point (p_k,a_k,u_k) in the three dimensional space, such that $0 \le p_k \le 1, 0 \le a_k \le 0.5, 0 \le u_k \le 0.5$, where p_k, a_k and u_k are the dimension indexes for country k computed using formula (1.1). In the three dimensional space, the point (0,0,0) will indicate the worst situation (complete financial exclusion), and the point (1,0.5,0.5) will indicate the best or ideal situation (complete financial inclusion) in the present context.

The IFI_k for the country k is measured by the simple average of normalised Euclidean distance of the point (p_k,a_k,u_k) from the point (0,0,0), and its normalised inverse Euclidian distance the ideal point (1,0.5,0.5). Algebraically,

$$\text{IFI}_k = \frac{1}{2}\left[\frac{\sqrt{p_k^2 + a_k^2 + u_k^2}}{\sqrt{1.5}} + \left(1 - \frac{\sqrt{\left(1-p_k\right)^2 + \left(0.5-a_k\right)^2 + \left(0.5-u_k\right)^2}}{\sqrt{1.5}}\right)\right] \quad (1.6)$$

IFI for Asian Countries, 2004–2013

We now present, in Table 1.2, the computed values of the IFI elaborated in the preceding sections for 31 Asian economies for the years 2004–2013, subject to availability of data. The number of countries for which IFI values are computed varies across years depending on the availability of required data. As evident from Table 1.2, different economies of Asia are at different levels of financial inclusion. For the most recent year, 2013, the IFI varied from a low of 0.061 for Yemen to a high of 0.916 for Japan. The weighted average of IFI, weighted by the proportion of adults for this set of economies for 2013 is 0.385.

[22] These weights, though they seem a bit arbitrary, are decided based on extensive discussion with banking sector experts and academicians. When appropriate data on all dimensions are available, the weights can be revised accordingly.

Table 1.2 Index of financial inclusion: Asian economies, 2004–2013

S. No.	Country name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
1	Afghanistan							0.056	0.047	0.096	0.089
2	Armenia	0.089	0.133	0.140	0.176	0.188	0.215	0.238	0.289	0.343	0.378
3	Azerbaijan						0.137	0.171	0.206	0.276	0.383
4	Bangladesh	0.318	0.333	0.347	0.343	0.356	0.362	0.389	0.406	0.424	0.437
5	Bhutan		0.173	0.182	0.187	0.205	0.229	0.276	0.344	0.196	0.350
6	Brunei Darussalam					0.588	0.599	0.604	0.606	0.687	0.694
7	Cambodia					0.060	0.072	0.080	0.170	0.189	0.173
8	China (Mainland)									0.258	0.205
9	Georgia	0.093	0.136	0.178	0.216	0.270	0.281	0.301	0.338	0.407	0.399
10	India		0.294	0.297	0.301	0.323	0.347	0.365	0.388	0.418	0.440
11	Indonesia	0.185	0.188	0.174	0.177	0.180	0.188	0.216	0.248	0.282	0.331
12	Japan	0.922	0.921	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.916
13	Jordan				0.410	0.399	0.401	0.356	0.360	0.361	0.311
14	Republic of Korea	0.860	0.863	0.870	0.872	0.883	0.887	0.885	0.885	0.889	
15	Kuwait	0.386	0.411	0.439	0.461	0.453	0.453	0.439	0.452	0.425	
16	Laos								0.057	0.034	0.126
17	Lebanon		0.515	0.527	0.539	0.561	0.583	0.605	0.604	0.624	0.588
18	Malaysia	0.609	0.660	0.673	0.677	0.690	0.711	0.721	0.737	0.762	0.728
19	Maldives								0.552	0.469	0.544
20	Mongolia					0.337	0.345	0.387	0.434	0.481	0.491
21	Myanmar									0.056	0.066
22	Nepal									0.204	0.195
23	Pakistan	0.096	0.100	0.107	0.115	0.115	0.108	0.113	0.163	0.212	0.251
24	Philippines	0.145	0.149	0.153	0.151	0.163	0.170	0.251	0.281	0.291	0.311
25	Saudi Arabia						0.319	0.319	0.317	0.322	0.363
26	Syrian Arab Republic					0.120	0.132	0.137	0.094	0.070	

(*continued*)

Table 1.2 (continued)

S. No.	Country name	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
27	Thailand	0.417	0.450	0.479	0.502	0.522	0.527	0.541	0.540	0.574	0.540
28	Turkey		0.525	0.540	0.563	0.550	0.556	0.726	0.733	0.746	0.720
29	United Arab Emirates						0.417	0.415	0.392	0.394	0.324
30	Uzbekistan	0.134	0.135	0.140	0.146	0.150	0.154	0.155			
31	Yemen							0.055	0.050	0.058	0.061

Source: Author's computation using data from the IMF's FAS database

Countries by IFI Categories

We can categorise these countries into three groups—High IFI countries (countries with IFI values between 0.6 and 1), Medium IFI countries (countries with IFI values between 0.3 and 0.6), and Low IFI countries (countries with IFI less than 0.3).

High IFI countries: Countries having high IFI values consistently for at least four years are: Brunei, Japan, Republic of Korea, Malaysia, and Turkey, with Japan having an extremely high level of financial inclusion, indicated by an IFI value of more than 0.9. Clearly, these are the high income and relatively better off economies (upper middle income) in the Asian region.

Medium IFI countries: Countries that have been in the medium IFI categories for at least four years are: Bangladesh, Georgia, India, Jordan, Kuwait, Maldives, Mongolia, Saudi Arabia, Thailand, and United Arab Emirates. Lebanon, which belonged to the high IFI group during 2010–2012, slipped down to the medium IFI category in 2013. Armenia, Azerbaijan, Bhutan, Indonesia, and the Philippines are countries that belonged to low IFI categories earlier but moved up to the medium level of IFI subsequently. As evident, majority of these 16 economies with a medium level of financial inclusion are middle-income economies (Jordan, Maldives, Thailand, Azerbaijan, and Lebanon are upper middle income countries, and Armenia, Bhutan, Georgia, India, Indonesia, Mongolia, and the Philippines belong to the lower middle-income category). Apart from these, three high-income countries, vis-à-vis, Kuwait, Saudi Arabia, and United Arab Emirates also have a medium level of financial inclusion. Bangladesh is the only low-income country having a medium level of financial inclusion.

Low IFI countries: Out of the 31 Asian countries considered in this analysis, ten countries have low financial inclusion as depicted by their IFI values—Afghanistan, Cambodia, China, Laos, Myanmar, Nepal, Pakistan, Syria, Uzbekistan, and Yemen. These economies are all low-income or lower middle-income, except for China, which is an upper middle-income country. The countries having abysmally low levels of financial inclusion are those that have IFI values less than 0.1 and these are Afghanistan, Syria, and Yemen. It may be noted that in Syria, there

is a gradual decline in the level of financial inclusion over the years from low to an extremely low level.

Categorisation of economies into these categories based on their level of financial inclusion indicates that in general, the level of financial inclusion and level of income move in the same direction, although there are some exceptions. We now present some descriptive statistics of the IFI values, organised by income categories and regional grouping of countries.

IFI by Income Categories

Table 1.3 presents some descriptive statistics of the IFI values computed for the Asian economies during 2004–2013. In the interest of brevity, we will discuss the results for the most recent year, 2013. The IFI values for all countries range from a low of 0.06 (extremely low) to 0.92 (extremely high) in 2013, indicating that the level of financial inclusion in these countries varies quite substantially. The average IFI (weighted by proportion of adults) for these countries taken together is 0.39, which corresponds to a medium level of financial inclusion. Over the years, this weighted mean IFI for the Asian economies has improved from 0.32 in 2004 to 0.39 in 2013. The coefficient of variation (CV), a measure of stability of a variable, stands at 0.56—a considerably lower level if we compare the CV over the years. The declining trend in the CV indicates some tendency, however mild, towards convergence in IFI values in these economies. Out of the 27 Asian countries for which data are available for the year 2013, about 30 % had low IFI while about 55 % had medium level of IFI.

When we consider only the relatively richer countries of Asia (comprising of high and upper middle-income countries), we see that the IFI values in these relatively better off countries ranged between a minimum of 0.25 and a maximum of 0.92 in 2013. The average IFI (weighted by proportion of adults) for this club is 0.49 in 2013. It is interesting to see that the average IFI for the club of better off Asian economies has been declining, and the CV has been rising over the years. For 2013, majority (about 58 %) of these countries had medium level of financial inclusion, while for 8 % of these richer economies the level of financial inclusion was low.

Considering the group of relatively poor (low and lower middle-income) economies in the region, we find that the IFI values for this

Table 1.3 Descriptive statistics of IFI values of Asian economies grouped by income category: 2004–2013

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
All countries										
Min	0.089	0.100	0.107	0.115	0.060	0.072	0.055	0.047	0.034	0.061
Max	0.922	0.921	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.916
Mean (weighted)	0.320	0.388	0.400	0.411	0.397	0.392	0.392	0.411	0.399	0.385
S. D.	0.298	0.265	0.264	0.254	0.249	0.237	0.247	0.243	0.244	0.217
C. V.	0.84	0.71	0.69	0.64	0.65	0.62	0.66	0.62	0.64	0.56
Total no. of countries	12	16	16	17	21	24	26	27	30	27
No. of High IFI countries	3	3	3	3	3	3	6	6	6	4
No. of Medium IFI countries	3	5	5	7	9	11	9	11	11	15
No. of Low IFI countries	6	8	8	7	9	10	11	10	13	8
Proportion of Low IFI countries	50	50	50	41.2	42.9	41.7	42.3	37.0	43.3	29.6
Rich countries (high + upper middle income group)										
Min	0.386	0.411	0.439	0.410	0.399	0.137	0.171	0.206	0.258	0.205
Max	0.922	0.921	0.920	0.920	0.920	0.920	0.920	0.920	0.920	0.916
Mean (weighted)	0.548	0.630	0.644	0.630	0.630	0.505	0.520	0.525	0.556	0.489
S. D.	0.247	0.202	0.192	0.189	0.180	0.224	0.230	0.217	0.224	0.213
C. V.	0.39	0.33	0.30	0.31	0.29	0.41	0.41	0.39	0.41	0.41
Total no. of countries	5	7	7	8	9	12	12	13	14	12
No. of High IFI countries	3	3	3	3	3	3	6	6	6	4
No. of Medium IFI countries	2	4	4	5	6	8	5	6	6	7
No. of Low IFI countries	0	0	0	0	0	1	1	1	2	1
Proportion of Low IFI countries	0.0	0.0	0.0	0.0	0.0	8.3	8.3	7.7	14.3	8.3

(*continued*)

Table 1.3 (continued)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Poor countries (lower middle+low income group)										
Min	0.089	0.100	0.107	0.115	0.060	0.072	0.056	0.047	0.034	0.066
Max	0.318	0.333	0.347	0.343	0.356	0.362	0.389	0.434	0.481	0.491
Mean (weighted)	0.131	0.181	0.191	0.202	0.208	0.220	0.224	0.247	0.244	0.265
S. D.	0.081	0.079	0.079	0.075	0.096	0.098	0.114	0.133	0.146	0.139
C. V.	0.54	0.43	0.41	0.37	0.47	0.45	0.50	0.53	0.59	0.48
Total no. of countries	7	9	9	9	12	12	13	13	15	14
No. of High IFI countries	0	0	0	0	0	0	0	0	0	0
No. of Medium IFI countries	1	1	1	2	3	3	4	5	5	8
No. of Low IFI countries	6	8	8	7	9	9	9	8	10	6
Proportion of Low IFI countries	86	89	89	78	75	75	69	62	67	43

Source: Author's computation using data from the IMF's FAS database

group varied between 0.07 and 0.49, with a weighted average of 0.27. The average IFI for this set of countries has shown some improvement over the years. Similarly, the declining trend of the CV of IFI values for these countries indicates a tendency towards convergence. Even in this group of relatively poorer Asian economies, a majority, 57 %, has a medium level of IFI, and 43 % has low IFI (2013).

Thus, the main observations from Tables 1.2 and 1.3 are: Asian economies are at varying levels of financial inclusion, ranging from extremely low (Afghanistan, Myanmar, Syria, Yemen) to extremely high (Japan). In 2013, a majority of the Asian countries have a medium level of financial inclusion, with an average IFI value of 0.39. On an average, there is an overall improvement in the level of financial inclusion during 2004–2013.

IFI by Regional Grouping

In Table 1.4, we present IFI values only for the latest year (2013/2012) for the Asian economies, by regional grouping. As indicated by this table, the eastern Asian countries lead the region in the race towards greater financial inclusion. The leaders of the Asian economies in financial inclusion—Japan, Korea (South), Malaysia, Brunei, and Thailand—all belong to this region. Except for China and Cambodia that have low levels of financial inclusion, all countries in this group have at least a medium level of financial inclusion.

In terms of regional averages, Western Asia follows Eastern Asia, with an average IFI value of 0.372. Turkey and Lebanon are the leaders in this region, while Syria and Yemen are the worst performers. In terms of average IFI value, Central Asia stands third with average IFI 0.334, followed by South Asia with an average IFI of 0.303. Except for Bangladesh, Bhutan, India, and Maldives, which have medium levels of financial inclusion, the rest of South Asia has low levels of financial inclusion.

IFI Level and Features of Banking Sector

In this section, we attempt to analyse, with the help of correlation a coefficient, whether there is any significant pattern in the level of IFI and some banking sector variables. The first variable is the share of foreign banks in total banking sector assets in a country, and it indicates whether

Table 1.4 Index of financial inclusion, by regional grouping (2013/2012)

Country	IFI value	Country rank	Country	IFI value	Country rank
Eastern + South Eastern Asia			*Western Asia*		
Brunei Darussalam	0.694	5	Jordan	0.311	21
Cambodia	0.173	25	Kuwait	0.425	12
China	0.205	23	Lebanon	0.588	6
Indonesia	0.331	18	Saudi Arabia	0.363	16
Japan	0.916	1	Syrian Arab Republic	0.070	29
Laos	0.126	27	Turkey	0.720	4
Malaysia	0.728	3	United Arab Emirates	0.324	19
Mongolia	0.491	9	Yemen	0.061	31
Philippines	0.311	20	*Regional average (weighted)*	*0.372*	
Republic of Korea	0.889	2	*South Asia*		
Thailand	0.540	8	Afghanistan	0.089	28
Regional average (weighted)	*0.509*		Bangladesh	0.437	11
Central Asia			Bhutan	0.350	17
Armenia	0.378	15	India	0.440	10
Azerbaijan	0.383	14	Maldives	0.544	7
Georgia	0.399	13	Myanmar	0.066	30
Uzbekistan	0.155	26	Nepal	0.195	24
			Pakistan	0.251	22
Regional average (weighted)	*0.334*		*Regional average (weighted)*	*0.303*	

Note: Regional averages are weighted averages, weighted by the proportion of adults in the countries of the region.
Source: Author's own

the banking sector in a country is outward looking or domestically oriented. The other two variables that we consider here relate to stability and health of the banking sector, namely, capital-asset ratio (CAR) and ratio of non-performing assets (NPA) to total assets.

In Table 1.5, we present some data on the share of foreign banks, CAR, and NPA, along with the IFI value and corresponding country ranks for different Asian countries.

As indicated by Table 1.5, the majority of the countries in Asia have a domestically oriented banking structure. There are only four countries (Georgia, Armenia, Pakistan, Cambodia) in our sample that can be

Table 1.5 Financial inclusion and banking sector characteristics of Asian countries

Country	IFI, 2013	Country rank-IFI	% of foreign bank assets in total bank assets	Capital asset ratio (%)	NPA to total assets (%)
(I)	(II)	(III)	(IV)	(V)	(VI)
Japan	0.916	1	0	5.5	1.9
Republic of Korea	0.889	2	19	8.3	0.6
Malaysia	0.728	3	18	9.6	1.8
Turkey	0.72	4	14	11.2	2.7
Brunei Darussalam	0.694	5	NA	9.3	5.4
Lebanon	0.588	6	36	7.6	4
Maldives	0.544	7	NA	NA	NA
Thailand	0.54	8	6	10.9	2.3
Mongolia	0.491	9	NA	NA	NA
India	0.44	10	5	6.9	4
Bangladesh	0.437	11	3	6	8.6
Kuwait	0.425	12	8	12.5	3.8
Georgia	0.399	13	64	16.8	3.5
Azerbaijan	0.383	14	3	NA	4.5
Armenia	0.378	15	79	15.6	6.1
Saudi Arabia	0.363	16	0	13.6	1.4
Bhutan	0.35	17	NA	17	12.1
Indonesia	0.331	18	32	12.5	2.1
United Arab Emirates	0.324	19	2	15.2	7.1
Philippines	0.311	20	2	10.8	2.4
Jordan	0.311	21	23	12.9	7
Pakistan	0.251	22	53	9.3	12.8
China (Mainland)	0.205	23	1	6.3	1.1
Nepal	0.195	24	13	NA	NA
Cambodia	0.173	25	54	NA	NA
Uzbekistan	0.155	26	NA	11.2	0.4
Laos	0.126	27	NA	NA	NA
Afghanistan	0.089	28	NA	7.8	6.1
Syrian Arab Republic	0.07	29	NA	NA	NA
Myanmar	0.066	30	NA	NA	NA
Republic of Yemen	0.061	31	0		21.7

Note: Data for column (IV) are from Claessens and van Horen (2012), pertain to 2009; for columns (V) and (VI) from World Development Indicators, World Bank, pertain to 2013.

NA not available

considered as having a foreign bank dominated banking sector, with more than 50 % of its assets owned by foreign banks. In most other countries, the share of foreign banks in total banking sector assets is found to be quite low. The four countries with the high share foreign banks are seen to have low level of financial inclusion. On the other hand, Japan, with an extremely high level of financial inclusion, has a completely domestic banking sector. The Republic of Korea, Malaysia, and Turkey—other high performers in financial inclusion—have less than 20 % of foreign assets in their banking sector. The simple correlation coefficient between IFI value and share of foreign banks in banking sector assets for this set of countries is −0.12, which is found to be statistically insignificant.

CAR is an indication of how well capitalised a banking sector is—the higher the CAR, the better prepared the banking sector to face default risks. For the set of Asian countries considered here, we see a negative but statistically insignificant correlation (−0.29) coefficient between IFI values and CAR values. The NPA is another indicator of the health of a country's banking sector. For our set of countries, the correlation coefficient between IFI and NPA is found to be −0.45, which is highly significant. Thus, IFI and NPA seem to move in opposite directions. This could mean that countries having low NPAs in their banks may be able to have low NPA by restricting poor borrowers, thus leading to less financial inclusion. This is only a tentative finding that needs to be probed further and is beyond the scope of this chapter.

Conclusion

In this chapter, we attempted to quantify levels of financial inclusion in various Asian economies. We use IFI to measure financial inclusion in a set of Asian economies, for the period 2004–2013. We find that these countries are at various levels of financial inclusion, ranging from extremely low IFI (less than 0.1) to extremely high IFI (more than 0.9). On average, Asian economies display a medium level of financial inclusion. However, countries like Japan, Republic of Korea, Malaysia, and Brunei Darussalam have achieved high levels of financial inclusion, indicated by their IFI values. The temporal trend indicates that on an average, there is an improvement in financial inclusion over the years. In terms of regional grouping,

Eastern Asia seems to be ahead of other regions in the race for better financial inclusion, followed by Western Asia, Central Asia, and South Asia. A correlation analysis of financial inclusion and some financial sector variables indicate that NPA levels and IFI levels move in opposite direction in a statistically significant sense. The correlation coefficient between IFI and other variables, such as share of foreign banks in total banking assets and CAR, was not found to be statistically significant.

The IFI measures computed for these Asian economies provide us with useful information on the status of financial inclusion in these economies. These measures can also be used to investigate interesting issues of interlinkages among financial inclusion, financial development, and economic development pertaining to these economies.

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2

Determinants of Financial Inclusion in Asia

Zuzana Fungáčová and Laurent Weill

Introduction

Financial inclusion, defined as the use of formal financial services, is one of the major determinants of economic development. Being financially included allows individuals to relax constraints associated with investment in education and with launching a business. Financial inclusion thus fosters growth and reduces poverty (Beck et al. 2007; Bruhn and Love 2014).[1] It permits individuals to save money and thus reduces uncertainty of income, but it also contributes to financial stability, as

[1] Dabla-Norris et al. (2015) show that the reduction of constraints to financial inclusion can influence growth and inequality depending on country-specific characteristics in an empirical investigation of three low-income countries and three emerging market countries.

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more frequent use of bank deposits creates a more stable deposit base for banks in troubled times (Han and Melecky 2013).

An increasing number of papers examine financial inclusion using the World Bank's Global Findex database, which contains financial inclusion indicators for 2011 for 148 countries. Demirgüc-Kunt and Klapper (2013) investigate the use of financial services for all countries by focusing on the three main indicators of financial inclusion: ownership of a bank account, saving in a bank account, and use of bank credit. They show that income is a major determinant of financial inclusion. Allen et al. (2012) examine the individual and country characteristics that determine ownership of a bank account and saving in a bank account for 123 countries. They find evidence that income and education enhance financial inclusion. Fungacova and Weill (2015) analyze financial inclusion in China and compare it with the other BRICS (Brazil, Russia, India, China, South Africa) countries. They observe that income and education enhance the level of financial inclusion, and men and older people have higher levels of financial inclusion. Mehrotra and Yetman (2014) provide an empirical investigation of a theoretical framework studying how financial inclusion can influence welfare-maximizing monetary policy.

Our aim in this chapter is to contribute to the understanding of financial inclusion in 12 Asian countries: China, Hong Kong, India, Indonesia, Japan, Malaysia, the Philippines, Singapore, South Korea, Thailand, Taiwan, and Vietnam. This region of the world is characterized by impressive economic growth in recent decades. Nevertheless, there are still major cross-country differences in economic development. While Japan and Singapore are among the richest countries in the world, the Philippines and Vietnam are classified as lower middle-income countries by the World Bank. Differences in financial inclusion may contribute to differences in per capita income, as financial exclusion could be a constraint for economic growth in some Asian countries.

Our analysis is composed of two parts. First, we investigate the extent to which these countries differ in financial inclusion. To this end, we analyze the indicators of financial inclusion for each country. Second, we analyze the determinants of financial inclusion. We aim to identify which

individual characteristics influence financial inclusion and whether they differ across Asian countries. The answers to these questions highlight the current state of financial inclusion in Asian countries and will contribute to the design of policies to promote it.

The remainder of the chapter is structured as follows. Section 'Data' presents the data. Section 'Indicators of Financial Inclusion' provides an analysis of the indicators of financial inclusion. Section 'Determinants of Financial Inclusion' presents the estimations on how individual characteristics are associated with financial inclusion indicators. Section 'Conclusion' concludes.

Data

We investigate financial inclusion in 12 Asian countries. Our sample of countries includes countries from the same geographic region, which naturally differ in various ways, including economic development.

The data are from the World Bank's Global Findex database, which includes individual-level data originating from a survey of more than 150,000 adults in 148 countries in 2011. The Global Findex questionnaire provides detailed information on financial inclusion. It contains a large set of questions on the use and motives for use of financial services. In addition, the database includes information on four individual characteristics (income, education, age, and gender), which we use in the estimations to identify the determinants of financial inclusion.

The survey was conducted by Gallup, Inc., in association with its annual Gallup World Poll. Since 2005, Gallup has surveyed about 1000 people yearly in each of the countries. However the sample can be larger for large countries. Thus our dataset includes 4220 individuals for China, 3518 for India, and about 1000 for each of the other ten countries. The target population is the entire civilian, noninstitutionalized population above the age of 15. Additional information on this database can be found in Demirgüc-Kunt and Klapper (2012).[2]

[2] The Global Findex database is freely available on the World Bank website: http://datatopics.worldbank.org/financialinclusion/.

Indicators of Financial Inclusion

To document the level of financial inclusion in Asian countries, we measure financial inclusion from different perspectives. Following Demirgüc-Kunt and Klapper (2013), we use three main indicators. The first and most traditional one is ownership of an account in a formal financial institution (Formal Account). This is determined via the survey question: "Do you currently have a bank account at a formal financial institution?" This indicator represents the broader form of financial inclusion: A formal account serves as an entry key to the banking industry because it enables the individual to open a savings account and to apply for a loan.

The second indicator is based on saving behavior in a formal financial institution (Formal Saving). The survey question used in this case is: "Have you saved money using an account at a bank, credit union or microfinance institution in the past 12 months?" This question only concerns those who answered yes to the question asking if they saved money in the past 12 months at all, so that the number of respondents is less than for the first indicator. This measure provides information on the willingness of savers to save money in a formal financial institution compared to alternative forms of saving.

The third indicator of financial inclusion considers the usage of bank credit (Formal Credit). The question here aims to determine whether the individual has a bank loan: "Have you borrowed any money from a financial institution (bank, credit union or microfinance institution) in the past 12 months?"

Table 2.1 presents the main statistics for these three indicators for all the countries. It should be noted that the number of respondents is not the same for each indicator.

Regarding formal accounts, we observe major differences across countries: While 98.7 % of individuals in Singapore have an account at a formal financial institution, only about 23 % of Vietnamese and Indonesian individuals have one. Demirgüc-Kunt and Klapper (2013) point out that half of the world's adult population still does not have a formal account. Taking into account the world average, we can classify Asian countries in three groups: those with high financial inclusion (Hong Kong, Japan,

Table 2.1 Financial inclusion indicators

	Formal account			Formal saving			Formal credit		
	Obs.	Mean	St. dev.	Obs.	Mean	St. dev.	Obs.	Mean	St. dev.
China	4184	0.663	0.473	1799	0.819	0.385	4195	0.065	0.247
Hong Kong	1023	0.893	0.309	617	0.707	0.456	1024	0.069	0.254
India	3501	0.373	0.484	947	0.565	0.496	3460	0.081	0.273
Indonesia	997	0.230	0.421	439	0.442	0.497	998	0.110	0.313
Japan	993	0.970	0.171	639	0.842	0.365	994	0.071	0.258
Korea	997	0.900	0.301	630	0.743	0.437	996	0.160	0.366
Malaysia	985	0.710	0.454	513	0.723	0.448	995	0.117	0.321
Philippines	994	0.266	0.442	452	0.361	0.481	998	0.110	0.313
Singapore	1000	0.987	0.113	654	0.962	0.192	1000	0.116	0.320
Thailand	999	0.737	0.441	628	0.726	0.446	995	0.185	0.388
Taiwan	981	0.766	0.424	625	0.760	0.427	995	0.108	0.310
Vietnam	983	0.232	0.422	371	0.294	0.456	919	0.161	0.368
Total	17,637	0.609	0.488	8314	0.703	0.457	17,569	0.099	0.299
World average		0.50			0.22			0.09	

This table displays the descriptive statistics for the three financial inclusion indicators. Formal Account refers to adults reported to currently have a bank account at a formal financial institution. Formal Saving refers to adults reported to have saved or set aside money in the past 12 months using a financial institution. Formal Credit refers to adults reported to have borrowed money in the past 12 months using a financial institution. The data on world average come from Demirgüc-Kunt and Klapper (2012)

Korea, Singapore), with mean inclusion rates between 89.3 and 98.7 %; those with average financial inclusion (China, Malaysia, Taiwan, Thailand), with mean inclusion rates ranging from 66.3 to 76.6 %; and those with low financial inclusion (India, Indonesia, Philippines, Vietnam) with mean inclusion rates between 23 and 37.3 %.

Cross-country differences in formal accounts can be interpreted by accounting for the country's level of economic development. Demirgüc-Kunt and Klapper (2013) argue that GDP per capita plays a major role in explaining cross-country differences in the use of formal accounts. They find wide discrepancies in formal account use between high-income and low-income countries. Overall, our analysis of financial inclusion levels is in line with this view: All the countries in the high financial inclusion group are high-income countries, while all those in the low financial inclusion group are middle-income or lower-income countries (Fig. 2.1). There are some interesting exceptions in the relationship between income per capita and use of

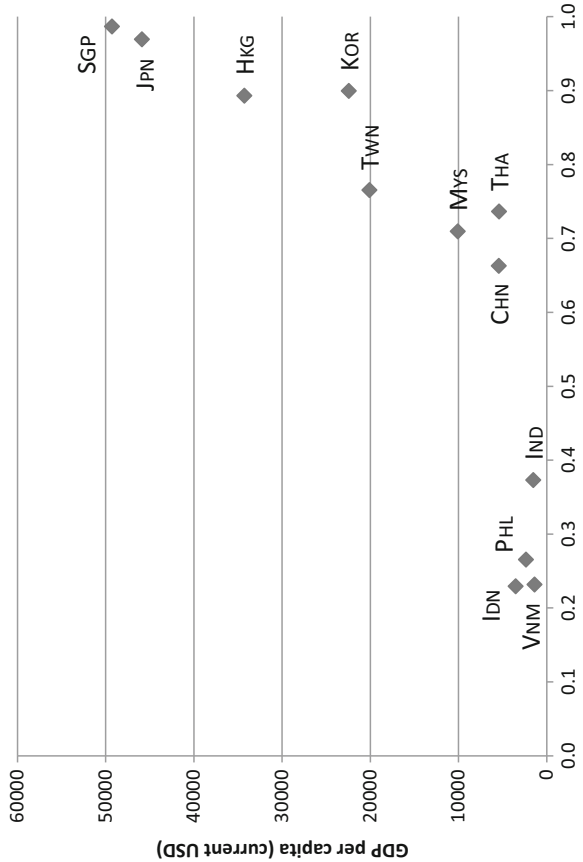

Fig. 2.1 Financial inclusion measured by formal account and the level of economic development in 2011

formal accounts, however: GDP per capita in Taiwan is much higher than in Thailand (US $20,101 vs. US $5395 for 2011, according to the IMF), but their use of formal accounts is very similar (73.7 vs. 76.6 %).

In terms of formal saving, we again observe wide cross-country differences. On average, 96.2 % of Singaporean individuals who have saved in the past 12 months have saved at a financial institution, but only 29.4 % of Vietnamese savers have done so. All the countries score higher than the world average of 22 % (Demirgüc-Kunt and Klapper 2013), suggesting that Asian countries are characterized by high formal savings rates. Many studies have examined the high savings rate in China (e.g. Yang 2012), so it is of interest to point out a more general observation of high levels of formal saving in Asian countries more broadly, which is in line with the analysis by Horioko and Terada-Hagiwara (2011).

Even though the countries at both extremes are similar in terms of the first two measures of financial inclusion, the comparison between formal accounts and formal savings does not reveal the same ranking across countries. This difference stresses that per capita income does not play the same role in explaining cross-country differences in formal savings and formal accounts.

In terms of formal credit, the third measure of financial inclusion, we observe low use for most countries. The number of individuals who report having obtained formal credit in the past year ranges from 6.5 % in China to 18.5 % in Thailand. This observation does not significantly differ from what is observed in the rest of the world. The average for high-income countries is 14 %.

The most striking here is that no relationship is observed between the use of formal credit and the level of economic development (Fig. 2.2). In spite of their high levels of GDP per capita, Hong Kong and Japan are, after China, the countries with the lowest use of formal credit in our sample (respectively 6.9 and 7.1 %). This observation points to the influence of other factors on the use of formal credit. The case of China illustrates well the impact of two complementary factors: the fact that formal credit is directed to large state-owned firms (Hale and Long 2010; Geng and N'Diaye 2012; Herrala and Jia 2015), which results in limited access to bank credit for individuals, and the use of informal modes of financing. In the case of Japan, it is of interest to point out the wide use of credit cards. The share of Japanese respondents having a credit card in

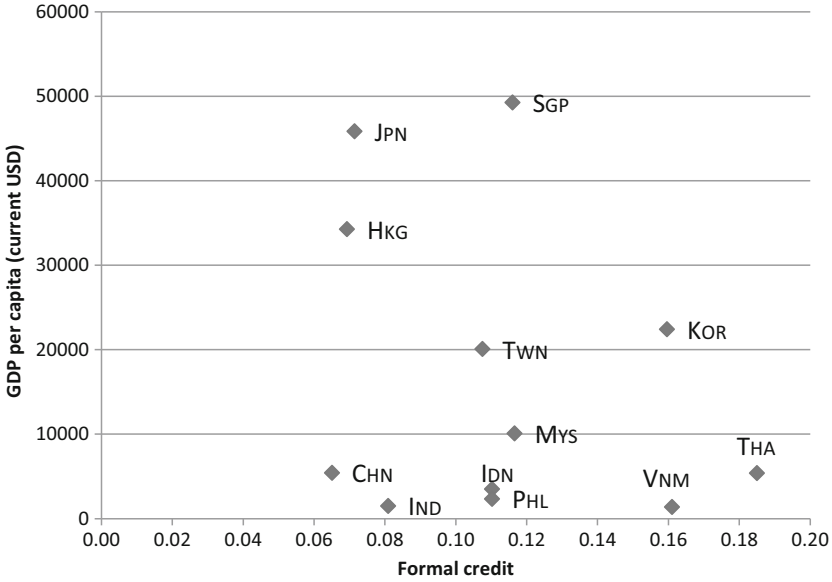

Fig. 2.2 Financial inclusion measured by formal credit and the level of economic development in 2011

the survey is by far the highest in our sample (71.2 %); the average share stands at 21.4 %. This observation suggests that the low use of formal credit in Japan can be explained by greater reliance on credit cards.

Furthermore we compare the figures for the use of formal credit with the importance of domestic credit in general, which also serves as an indicator of the level of financial development in a given country. The Global Financial Development Database (Cihak et al. 2012) provides information on the ratio of bank private credit to GDP for all countries of our sample, with the exception of Taiwan. An analysis of the 2011 figures reveals the existence of two main groups of countries in our sample. The first group consists of countries with relatively low values: India, Indonesia, and the Philippines. In the second group there are all other countries for which the ratio of bank private credit to GDP ranges between 98.43 % (Korea) and 121.49 % (China). The level of bank private credit in these countries is comparable to what is observed in developed countries such as France (113.60 %) or Germany (103.82 %). In addition, we stress the specific case of Hong Kong, with a very high value (186.24 %).

Demirgüc-Kunt and Klapper (2013) observe a positive relationship between this indicator of financial development and the use of formal credit in their worldwide analysis of financial inclusion. However, we do not find the same result for Asian countries. Notably the three countries with the lowest use of formal credit (China, Hong Kong, Japan) all have a high ratio of bank private credit to GDP.

Determinants of Financial Inclusion

Methodology

In this section we use the data on individuals' characteristics in the Global Findex database to examine how these different characteristics are associated with financial inclusion in Asian countries. To do so, we follow the methodology applied by Fungacova and Weill (2015) to identify the determinants of financial inclusion in China and extend it to the other Asian countries studied.

We perform probit estimations to explain measures of financial inclusion and estimate the following equation:

$$finInc_i = \alpha + \beta * income_i + \gamma * education_i + \delta * age_i + \sigma * gender_i + \varepsilon_i \quad (2.1)$$

where finInc denotes one of three indicators of financial inclusion and i is the index for individuals. The explanatory variables belong to four groups of individuals' characteristics provided in the survey dataset: income, education, age, and gender. Income is indicated by including four dummy variables, each equal to one if the individual's income is in a given quintile, from the first (Income – poorest 20 %) to the fourth (Income – fourth 20 %). The omitted dummy variable is for the fifth income quintile. We consider two dummy variables for education, equal to one if the individual has secondary education (Secondary Education) or tertiary education (Tertiary Education). We include age defined as the number of years (Age) and squared age (Age^2) in the estimations, to consider possible nonlinearity in the relationship between age and financial inclusion. Gender is taken into account by introducing a dummy variable equal to one if the individual is a female (Female). Descriptive statistics for the characteristics of individuals are reported in Table 2.2.

Table 2.2 Descriptive statistics for the main variables in the estimations

	Definition	China	HK	Indonesia	India	Japan	Korea	Malaysia	Philippines	Singapore	Thailand	Taiwan	Vietnam
Female	=1 if female, =0 otherwise	0.530	0.544	0.546	0.476	0.547	0.540	0.547	0.576	0.515	0.653	0.524	0.534
Age	age in number of years	43.961	40.407	40.111	36.239	54.054	44.303	38.358	39.805	43.732	45.435	41.016	41.930
Income – poorest 20 %	=1 if income in the first income quintile, =0 otherwise	0.170	0.207	0.215	0.215	0.234	0.231	0.208	0.174	0.181	0.263	0.176	0.219
Income – second 20 %	=1 if income in the second income quintile, =0 otherwise	0.170	0.211	0.185	0.260	0.206	0.200	0.168	0.237	0.178	0.128	0.201	0.212
Income – third 20 %	=1 if income in the third income quintile, =0 otherwise	0.175	0.185	0.314	0.149	0.186	0.174	0.288	0.153	0.227	0.261	0.218	0.167

(*continued*)

Table 2.2 (continued)

	Definition	China	HK	Indonesia	India	Japan	Korea	Malaysia	Philippines	Singapore	Thailand	Taiwan	Vietnam
Income – fourth 20 %	=1 if income in the fourth income quintile, =0 otherwise	0.207	0.145	0.124	0.191	0.210	0.232	0.136	0.226	0.240	0.167	0.190	0.206
Income – richest 20 %	=1 if income in the fifth income quintile, =0 otherwise	0.278	0.253	0.162	0.185	0.163	0.163	0.200	0.210	0.174	0.180	0.216	0.197
Secondary education	=1 if secondary education, =0 otherwise	0.304	0.674	0.541	0.312	0.614	0.547	0.668	0.588	0.578	0.273	0.464	0.461
Tertiary education	=1 if tertiary education, =0 otherwise	0.076	0.178	0.035	0.097	0.275	0.326	0.139	0.135	0.194	0.093	0.370	0.173

Determinants of Financial Inclusion Indicators

We present our results by displaying the estimations in which we use alternatively the three major indicators for financial inclusion as the dependent variable: formal account, formal saving, and formal credit.

Tables 2.3 and 2.4 display our results when explaining formal account. The most striking result is the similarities across Asian countries for the determinants of having a formal account. This conclusion was not straightforward as countries have major differences in terms of economic development and of financial inclusion.

We observe that gender does not impact having a formal account in eight of our studied countries. While women are less likely to report having a formal account in three countries (China, India, Malaysia), they are more likely to have an account in just one country, the Philippines. These results indicate that gender only influences having a formal account in certain countries, which suggests the influence of country-specific characteristics, for instance culture.

Age is positively related to having a formal account in all countries with the notable exception of Singapore. This finding may result from Singapore's very high level of financial inclusion, which reduces the possibility of observing differences in financial inclusion across age classes. Based on the estimated coefficients, older people tend to use more formal financial services than the rest of the population. This holds only to a certain extent, as the coefficient for Age^2 is significantly negative in all countries but the Philippines, Singapore, and Vietnam. Hence we find a nonlinear relation between age and formal account in most countries of our study, which accords with the conclusion of Allen et al. (2012) in their worldwide study. We can interpret this result as the consequence of a generational effect coming from the demand side or the supply side. On the one hand, older people may be less inclined to use formal financial services as they are not used to using them. On the other hand, formal financial institutions may put more effort into attracting younger clients.

We find that having a formal account is positively influenced by income in most countries of the sample. The dummy variable for the lowest income quintile is significant and negative in all countries with the exception of Japan and Singapore, which supports the view that the poorest

Table 2.3 Determinants of formal account (1/2)

	China	Hong Kong	India	Indonesia	Japan	Korea
Female	−0.045***	0.011	−0.140***	−0.022	−0.008	0.008
	[0.015]	[0.015]	[0.017]	[0.027]	[0.008]	[0.018]
Age	0.017***	0.011***	0.023***	0.019***	0.003***	0.008***
	[0.003]	[0.002]	[0.003]	[0.005]	[0.001]	[0.002]
Age^2	−0.0001***	−0.000***	−0.000***	−0.000***	−0.000**	−0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Income – poorest 20 %	−0.350***	−0.151***	−0.232***	−0.244***	−0.033	−0.099**
	[0.027]	[0.049]	[0.023]	[0.023]	[0.029]	[0.041]
Income – second 20 %	−0.274***	−0.082**	−0.118***	−0.219***	−0.037	−0.010
	[0.027]	[0.037]	[0.025]	[0.022]	[0.031]	[0.031]
Income – third 20 %	−0.163***	−0.092**	−0.074***	−0.226***	−0.043	−0.014
	[0.027]	[0.041]	[0.028]	[0.027]	[0.032]	[0.033]
Income – fourth 20 %	−0.030	−0.044	−0.068***	−0.115***	−0.017	0.045*
	[0.024]	[0.038]	[0.026]	[0.029]	[0.024]	[0.025]
Secondary education	0.149***	0.119***	0.151***	0.165***	0.037**	−0.007
	[0.017]	[0.041]	[0.021]	[0.031]	[0.015]	[0.027]
Tertiary education	0.216***	0.100***	0.353***	0.600***	0.031***	0.002
	[0.022]	[0.013]	[0.031]	[0.086]	[0.009]	[0.029]
Observations	4145	997	3501	984	993	988
Pseudo R^2	0.129	0.159	0.112	0.204	0.111	0.069
Log likelihood	−2311.444	−282.090	−2053.342	−423.205	−119.540	−301.492

This table presents probit estimations of the determinants of Formal Account in Asian countries. Each column corresponds to the estimation done in the country indicated at the top. The explanatory variables are income, education, gender, and age, as described in Table 2.2. We report the estimated marginal effects. Standard errors are in parentheses

Asterisks denote significance at the ***1 %, **5 % and *10 % level

Table 2.4 Determinants of formal account (2/2)

	Malaysia	Philippines	Singapore	Taiwan	Thailand	Vietnam
Female	−0.061**	0.098***	−0.001	−0.040	0.019	−0.005
	[0.029]	[0.028]	[0.001]	[0.027]	[0.029]	[0.026]
Age	0.020***	0.007*	0.000	0.033***	0.018***	0.007*
	[0.005]	[0.004]	[0.000]	[0.004]	[0.004]	[0.004]
Age^2	−0.000***	−0.000	−0.000	−0.000***	−0.000***	−0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Income –	−0.200***	−0.276***	0.001	−0.156***	−0.171***	−0.186***
poorest 20 %	[0.059]	[0.022]	[0.001]	[0.053]	[0.057]	[0.026]
Income –	−0.132**	−0.195***	0.001	−0.053	−0.271***	−0.116***
second 20 %	[0.059]	[0.028]	[0.001]	[0.046]	[0.069]	[0.029]
Income –	−0.078	−0.157***	0.002	0.013	−0.100*	−0.094***
third 20 %	[0.051]	[0.029]	[0.002]	[0.043]	[0.053]	[0.030]
Income –	0.051	−0.134***	0.002	−0.017	−0.048	0.023
fourth 20 %	[0.052]	[0.030]	[0.002]	[0.046]	[0.058]	[0.038]
Secondary	0.217***	0.107***	0.025**	0.112***	0.195***	0.229***
education	[0.044]	[0.037]	[0.012]	[0.038]	[0.027]	[0.035]
Tertiary	0.323***	0.402***	–	0.158***	0.230***	0.506***
education	[0.020]	[0.060]	–	[0.036]	[0.024]	[0.055]
Observations	954	993	806	960	999	972
Pseudo R^2	0.162	0.181	0.329	0.128	0.130	0.193
Log likelihood	−480.312	−469.851	−44.650	−460.067	−501.072	−426.526

This table presents probit estimations of the determinants of Formal Account in Asian countries. Each column corresponds to the estimation done in the country indicated at the top. The explanatory variables are income, education, gender, and age, as described in Table 2.2. We do not report coefficients for Tertiary Education for Singapore as all observations with this variable equal to one have Formal Saving equal to one. We report the estimated marginal effects. Standard errors are in parentheses

Asterisks denote significance at the ***1 %, **5 % and *10 % level

individuals are less likely to have a formal account. We also observe that the other dummy variables for income quintiles can be significant and negative with some differences across countries. Namely, dummy variables for the four lowest income quintiles are significantly negative in China, Indonesia, and the Philippines, while this is the case for only the three lowest income quintiles in Hong Kong, Thailand, and Vietnam. Both the two lowest income quintiles are significantly negative in Malaysia, and only the lowest income quintile is negative for Korea and Taiwan.

All in all, these results show a positive relationship between formal accounts and income. This result is in line with that of Demirgüc-Kunt and Klapper (2013) who find that income is positively related to financial inclusion. This relationship, however, is more or less pronounced depending on country-level characteristics. In particular, our results suggest that greater income per capita reduces this influence as no relation is found for Japan and Singapore, while we only see it for the lowest income quintile in Korea and Taiwan.

Education is positively associated with the ownership of a formal account in all countries with the exception of Korea. We observe that dummy variables for secondary education and tertiary education are significantly positive in all these countries, with a larger coefficient for tertiary education in all but Hong Kong. These results provide evidence of a beneficial impact of education on financial inclusion that overall does not vary across Asian countries.

We turn to the analysis of the determinants of formal savings. The estimations are reported in Tables 2.5 and 2.6. Overall we observe that these determinants are identical to those found for formal accounts with the notable exception of income.

We find that gender exerts a similar impact on formal savings as it does on formal accounts. In 10 countries, we observe the same results for the impact of Female for formal savings as we had for formal accounts. Namely, we find that gender is not significantly related to formal savings in 8 countries. Women are less likely to report formal savings in India, Malaysia, and Singapore, but are more likely to in the Philippines. The only differences in determinants of formal accounts and formal savings are observed for China (Female negatively influences Formal Account but not Formal Saving), and for Singapore (Female negatively influences Formal Saving but not Formal Account).

Table 2.5 Determinants of formal saving (1/2)

	China	Hong Kong	India	Indonesia	Japan	Korea
Female	0.012	−0.017	−0.180***	0.023	−0.008	−0.008
	[0.018]	[0.038]	[0.034]	[0.053]	[0.029]	[0.029]
Age	0.012***	0.023***	−0.005	0.035***	0.009*	0.009*
	[0.003]	[0.006]	[0.007]	[0.011]	[0.005]	[0.005]
Age^2	−0.0001***	−0.000***	0.000	−0.000***	−0.000*	−0.000*
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Income – poorest 20 %	−0.070	−0.232***	−0.079	−0.364***	0.054	0.054
	[0.043]	[0.077]	[0.060]	[0.057]	[0.042]	[0.042]
Income – second 20 %	−0.040	−0.063	0.036	−0.288***	0.017	0.017
	[0.033]	[0.059]	[0.050]	[0.065]	[0.043]	[0.043]
Income – third 20 %	0.022	−0.147**	−0.053	−0.315***	0.041	0.041
	[0.027]	[0.061]	[0.055]	[0.057]	[0.040]	[0.040]
Income – fourth 20 %	0.028	−0.051	−0.087*	−0.095	0.058	0.058
	[0.023]	[0.059]	[0.049]	[0.080]	[0.038]	[0.038]
Secondary education	−0.017	0.205**	0.079**	0.254***	0.067	0.067
	[0.021]	[0.094]	[0.039]	[0.057]	[0.054]	[0.054]
Tertiary education	−0.020	0.241***	0.171***	0.528***	0.129***	0.129***
	[0.034]	[0.063]	[0.047]	[0.064]	[0.045]	[0.045]
Observations	1785	606	947	433	639	639
Pseudo R^2	0.015	0.086	0.047	0.181	0.031	0.031
Log likelihood	−831.713	−334.435	−618.112	−243.462	−270.287	−270.287

This table presents probit estimations of the determinants of Formal Saving in Asian countries. Each column corresponds to the estimation done in the country indicated at the top. The explanatory variables are income, education, gender, and age, as described in Table 2.2. We report the estimated marginal effects. Standard errors are in parentheses

Asterisks denote significance at the ***1 %, **5 % and *10 % level

Table 2.6 Determinants of formal saving (2/2)

	Malaysia	Philippines	Singapore	Taiwan	Thailand	Vietnam
Female	−0.100**	0.165***	−0.026*	−0.034	0.021	−0.035
	[0.040]	[0.049]	[0.014]	[0.035]	[0.038]	[0.048]
Age	0.010	0.014*	0.007***	0.028***	0.017***	0.012
	[0.007]	[0.007]	[0.002]	[0.005]	[0.006]	[0.008]
Age^2	−0.000	−0.000	−0.000***	−0.000***	−0.000**	−0.000
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Income – poorest 20 %	−0.108	–	0.015	0.006	0.015	−0.102
	[0.079]	–	[0.016]	[0.063]	[0.063]	[0.071]
Income – second 20 %	−0.173**	−0.275***	0.017	−0.025	−0.124	−0.080
	[0.079]	[0.055]	[0.018]	[0.056]	[0.077]	[0.070]
Income – third 20 %	−0.066	−0.276***	0.011	−0.011	−0.006	−0.144**
	[0.060]	[0.057]	[0.020]	[0.052]	[0.057]	[0.058]
Income – fourth 20 %	0.034	−0.171***	0.017	−0.013	0.006	−0.013
	[0.077]	[0.056]	[0.018]	[0.054]	[0.060]	[0.063]
Secondary education	0.156**	0.170**	0.060**	−0.010	0.103**	0.274***
	[0.064]	[0.080]	[0.031]	[0.062]	[0.041]	[0.065]
Tertiary education	0.221***	0.274***	–	0.053	0.050	0.456***
	[0.055]	[0.092]	–	[0.063]	[0.058]	[0.088]
Observations	493	412	483	612	628	370
Pseudo R^2	0.069	0.107	0.172	0.081	0.027	0.116
Log likelihood	−272.929	−246.812	−81.426	−312.058	−358.636	−198.371

This table presents probit estimations of the determinants of Formal Saving in Asian countries. Each column corresponds to the estimation done in the country indicated at the top. The explanatory variables are income, education, gender, and age, as described in Table 2.2. We do not report coefficients for Income – poorest 20 % for the Philippines as all observations with this variable equal to one have Formal Saving equal to zero. We do not report coefficients for Tertiary Education for Singapore as all observations with this variable equal to one have Formal Saving equal to one. We report the estimated marginal effects. Standard errors are in parentheses

Asterisks denote significance at the ***1 %, **5 % and *10 % level

We find a positive influence of age on formal savings in most countries of the sample. India, Malaysia, and Vietnam are the only countries in which no significant coefficient is observed for Age. In all other countries, we find evidence of a nonlinear relationship between age and formal saving, as Age^2 is also significantly negative with the exception of the Philippines. Hence the overall relation between age and formal savings appears quite similar to the one we identified in the case of formal accounts.

In sharp contrast with gender and age, income does not exert the same influence on formal savings as it does on formal accounts. The dummy variable for the lowest income quintile is only significantly negative in two countries (Hong Kong, Indonesia). We observe for the rest some significant coefficients for some income quintile dummy variables in other countries, but in half of the countries of our sample no significant coefficient is observed for any of the income dummy variables. It appears that income contributes much less to financial inclusion through formal saving than through formal account.

We find a positive association between education and formal saving in most countries of the sample. Dummy variables for secondary education and tertiary education are significantly positive in seven countries, while only Secondary Education is significant in Thailand and only Tertiary Education is significant in Japan and Korea. No relation is observed in China and in Taiwan.

We complete our investigation of the determinants of financial inclusion indicators with the analysis of the factors explaining Formal Credit. We display the estimations in Tables 2.7 and 2.8.

A finding of prime concern is the negative association between being a woman and having formal credit in seven countries of our sample. This result is of particular interest as it shows that gender has a greater influence on the use of formal credit than on it does on formal accounts and formal savings. Once again we find a positive and significant coefficient for Female only in the Philippines. No significant coefficient is observed for India, Malaysia, Taiwan, and Thailand. Overall, being a woman appears to present more of an obstacle for credit than it does to having a formal account or formal savings in Asian countries.

The pattern for the relation between age and having formal credit is the same in all countries with one exception and confirms what has been observed for the other financial inclusion indicators. We spot significant

Table 2.7 Determinants of formal credit (1/2)

	China	Hong Kong	India	Indonesia	Japan	Korea
Female	–0.025***	–0.036***	–0.018*	0.005	–0.067***	–0.073***
	[0.007]	[0.012]	[0.009]	[0.019]	[0.015]	[0.023]
Age	0.009***	0.012***	0.005***	0.018***	0.011***	0.021***
	[0.001]	[0.002]	[0.002]	[0.004]	[0.003]	[0.003]
Age^2	–0.0001***	–0.000***	–0.000***	–0.000***	–0.000***	–0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Income – poorest 20 %	0.009	–0.019	0.011	0.014	–0.031**	–0.033
	[0.012]	[0.013]	[0.018]	[0.035]	[0.015]	[0.035]
Income – second 20 %	–0.017*	–0.030***	0.054***	–0.018	–0.038***	–0.015
	[0.009]	[0.011]	[0.019]	[0.032]	[0.015]	[0.036]
Income – third 20 %	–0.014	–0.019*	0.073***	0.052	–0.004	0.018
	[0.009]	[0.011]	[0.024]	[0.033]	[0.019]	[0.040]
Income – fourth 20 %	–0.033***	–0.003	0.027	–0.011	–0.034**	0.030
	[0.007]	[0.014]	[0.018]	[0.034]	[0.014]	[0.037]
Secondary education	0.008	0.046**	–0.007	0.056***	0.046*	0.055
	[0.009]	[0.018]	[0.011]	[0.021]	[0.026]	[0.036]
Tertiary education	0.035*	0.081	0.031	0.143*	0.034	0.034
	[0.018]	[0.055]	[0.020]	[0.084]	[0.040]	[0.041]
Observations	4156	998	3460	986	994	987
Pseudo R^2	0.056	0.153	0.025	0.052	0.099	0.077
Log likelihood	–943.265	–212.600	–947.927	–326.936	–230.400	–399.131

This table presents probit estimations of the determinants of Formal Credit in Asian countries. Each column corresponds to the estimation done in the country indicated at the top. The explanatory variables are income, education, gender, and age, as described in Table 2.2. We report the estimated marginal effects. Standard errors are in parentheses

Asterisks denote significance at the ***1 %, **5 % and *10 % level

Table 2.8 Determinants of formal credit (2/2)

	Malaysia	Philippines	Singapore	Taiwan	Thailand	Vietnam
Female	−0.015	0.035**	−0.061***	−0.013	−0.017	−0.044*
	[0.017]	[0.016]	[0.018]	[0.017]	[0.026]	[0.023]
Age	0.002	0.019***	0.016***	0.021***	0.031***	0.022***
	[0.004]	[0.003]	[0.003]	[0.003]	[0.005]	[0.004]
Age^2	−0.000	−0.000***	−0.000***	−0.000***	−0.000***	−0.000***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Income – poorest 20 %	−0.108***	−0.057***	0.010	0.052	0.209***	−0.008
	[0.017]	[0.018]	[0.036]	[0.035]	[0.056]	[0.037]
Income – second 20 %	−0.078***	−0.045***	−0.002	0.000	0.173***	−0.040
	[0.017]	[0.018]	[0.033]	[0.028]	[0.065]	[0.034]
Income – third 20 %	−0.025	0.006	0.043	0.025	0.111**	0.008
	[0.021]	[0.025]	[0.035]	[0.029]	[0.050]	[0.039]
Income – fourth 20 %	0.015	0.006	0.064*	0.002	0.084	0.024
	[0.029]	[0.022]	[0.034]	[0.027]	[0.055]	[0.038]
Secondary education	0.033	−0.005	0.052**	0.057*	−0.028	−0.016
	[0.029]	[0.021]	[0.026]	[0.032]	[0.029]	[0.026]
Tertiary education	0.187**	0.105**	0.055	0.080**	0.008	−0.079***
	[0.077]	[0.042]	[0.042]	[0.038]	[0.049]	[0.027]
Observations	961	997	1000	973	995	909
Pseudo R^2	0.138	0.147	0.088	0.082	0.075	0.058
Log likelihood	−298.189	−293.582	−327.154	−303.801	−440.555	−378.948

This table presents probit estimations of the determinants of Formal Credit in Asian countries. Each column corresponds to the estimation done in the country indicated at the top. The explanatory variables are income, education, gender, and age, as described in Table 2.2. We report the estimated marginal effects. Standard errors are in parentheses

Asterisks denote significance at the ***1 %, **5 % and *10 % level

coefficients which are positive for Age and negative for Age^2 in all countries but Malaysia. This result once again supports the finding of a nonlinear relationship between age and financial inclusion when considering formal credit.

The effect of income on having formal credit strongly differs across countries. The dummy variable for the first income quintile is only significantly negative in three countries (Japan, Malaysia, Philippines). We find some negative coefficients for other income quintile dummy variables in three other countries (China, Hong Kong, India). These results provide some evidence for a negative association between income level and having formal credit. However no significant negative coefficient is observed for all income quintile dummy variables in all the other countries. These results indicate that the beneficial influence of income on financial inclusion in Asian countries is not as clear and straightforward for formal credit as it is for formal accounts.

Education tends to favor the use of formal credit. We find significant and positive coefficients for at least one of both dummy variables for education in all countries of the sample with the exception of India, Korea, and Thailand. Indonesia and Taiwan are the only countries in which both dummy variables are positive and significant, providing support for the view that greater education enhances financial inclusion through the use of formal credit.

Conclusion

This analysis of the level and determinants of financial inclusion in Asian countries based on the Global Findex database finds both similarities and differences in financial inclusion across Asian countries.

The main differences relate to the levels of financial inclusion measured by the three indicators. First, ownership of a bank account varies considerably across countries. GDP per capita has a major influence on this key measure of financial inclusion. Second, saving in a bank account also differs widely across Asian countries. The pattern in this case, however, is not determined by GDP per capita, which suggests the influence of other factors for saving behavior in general. Third, the use of bank credit varies widely across Asian countries. The lowest levels of bank credit are observed in China, Hong Kong, and Japan, which suggests the absence of a relationship between level of economic development and formal credit.

The main similarities in the sample concern the determinants of financial inclusion indicators. We find that characteristics of individuals influence the use of formal financial services in Asian countries. First, gender does not influence the use of formal accounts and the use of formal savings in most countries studied. However women are less likely to report use of formal credit. Second, age contributes to enhanced financial inclusion on all three indicators for most countries. We nonetheless observe a nonlinear relationship in many cases, which supports the view that the positive influence of age on financial inclusion holds until a certain threshold. Third, education enhances the level of financial inclusion. We find that more educated people are more financially included across all three indicators. Fourth, income favors the use of formal accounts, but does not seem to influence the use of formal savings and formal credit. For both of these indicators, the positive influence of income is only observed in some countries. These findings for income at the individual level are in line with what is observed at the country level.

In terms of policy implications, we observe that financial inclusion may constitute an obstacle to growth in a limited number of Asian countries. Policymakers can contribute to enhance ownership of formal accounts by dismantling obstacles related to education and income and can foster the use of formal credit by reducing barriers associated with gender and education.

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Part II

Financial Inclusion: Importance and Implications

3

Does Financial Inclusion Reduce Poverty and Income Inequality in Developing Asia?

Cyn-Young Park and Rogelio V. Mercado Jr.

Introduction

Financial inclusion is a broad concept. As defined by Sarma (2008), financial inclusion is the process that ensures the ease of access, availability, and usage of the formal financial system for all members of an economy. The lack of access to the formal financial system ('financial exclusion') can be voluntary or involuntary. The World Bank (2014) defines voluntary exclusion as a condition where a segment of the population or of firms chooses not to use financial services either because they have no need for them or due to cultural or religious reasons. In contrast, involuntary exclusion arises from insufficient income and high risk profiles or from discrimination and market failures and imperfections. Policy and research initiatives must focus on involuntary exclusion, as it can be

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addressed by appropriate economic programs and policies designed to increase income levels and correct market failures and imperfections.

Although financial inclusion has become an important topic of the global policy agenda for sustainable development, the economic literature on financial inclusion is still in its infancy. Most studies have looked into the appropriate measures of financial inclusion at both the household and country levels, while others have focused on the role of financial access in lowering poverty and income inequality. Still others have dealt with varying levels of financial inclusion in advanced and emerging economies. These papers have laid the foundations in the field and provide key policy insights on the importance of financial inclusion on sustainable development. However, more work needs to be done.

This chapter contributes to the existing literature by (1) constructing a financial inclusion measure which utilizes available cross-country data, (2) determining which domestic factors are highly correlated with financial inclusion for an across-country sample including those in developing Asia,[1] and (3) understanding the link between financial inclusion and poverty and income inequality in an across-country sample, including those in developing Asia. By creating our own measure of financial inclusion indicator based on existing methodology, we can identify which factors are highly correlated with financial inclusion across a large set of countries. We can then compare which factors remain significantly correlated with financial inclusion both for the full and the developing Asia samples. By focusing on developing Asia, we cover a diverse group of countries including large, growing economies like the People's Republic of China, India, the Republic of Korea, Singapore, and Indonesia; small developing countries like Bhutan, Cambodia, Nepal, and Samoa; and transitioning economies like Kazakhstan, Armenia, and Georgia, among

[1] In this chapter, developing Asia refers to 37 economies in the region including Afghanistan (AFG); Armenia (ARM); Azerbaijan (AZE); Bangladesh (BGD); Bhutan (BTN); Brunei Darussalam (BRN); Cambodia (KHM); the People's Republic of China (CHN); Fiji (FJI); Georgia (GEO); Hong Kong, China (HKG); India (IND); Indonesia (IDN); Kazakhstan (KAZ); Kiribati (KIR); the Republic of Korea (KOR); the Kyrgyz Republic (KGZ); the Lao People's Democratic Republic (LAO); Malaysia (MAL); the Maldives (MLV); Mongolia (MNG); Myanmar (MMR); Nepal (NPL); Pakistan (PAK); Papua New Guinea (PNG); the Philippines (PHL); Samoa (WSM); Singapore (SGP); Solomon Islands (SLB); Sri Lanka (LKA); Tajikistan (TJK); Thailand (THA); Timor-Leste (TMP); Tonga (TON); Uzbekistan (UZB); Vanuatu (VUT); and Vietnam (VNM).

others. Common to this diverse set of economies is their sustained economic expansion, especially during the last decade, but they do exhibit varying levels of development and economic structures. Lastly, using our own financial inclusion indicator, we test the importance of financial inclusion in reducing poverty and lowering income inequality for both the full and the developing Asia samples. This study asks the following questions: First, what are the factors that influence the level of financial access both in the full and developing Asia samples? Second, does financial access affect poverty and income inequality in the full and developing Asia samples?[2]

Following the methodology of Sarma (2008), we constructed a financial inclusion indicator for a sample of 177 advanced, emerging, and developing countries which broadly resembles that of Honohan (2008) and Sarma (2008). The estimation results show that per capita income, rule of law, and demographic characteristics are significantly correlated with financial inclusion in both the full and developing Asia samples. Primary education completion and literacy are highly associated with financial inclusion in the full sample but not in the developing Asia sample. The findings also indicate that financial inclusion is significantly correlated with lower poverty levels in both the full and the developing Asia samples, but there appears to be no significant correlation between financial inclusion and income inequality in either sample.

This chapter is organized as follows. Section 'Related Literature' discusses financial inclusion and provides a literature review. Section 'Financial Inclusion Indicator' provides the methodology for the construction of our financial inclusion indicator and some stylized facts. Section 'Empirical Methodology and Data Sources' presents the empirical methodology, data sources, and determinants of poverty and income inequality, including our financial inclusion indicator. Section 'Empirical Results' highlights the key findings. Section 'Summary and Policy Implications' summarizes and offers some policy recommendations.

[2] Full sample includes all countries with available data for constructing the financial inclusion indicator. The Developing Asia sample refers to the 37 regional economies that are members of the Asian Development Bank.

Related Literature

The existing literature on financial inclusion offers various definitions of the concept. Several studies define the concept in terms of financial exclusion, which relates to the broader context of social inclusion. For example, Leyshon (1995) highlights the exclusion of some groups and individuals from gaining access to the formal financial system, while Sinclair (2001) focuses on the inability to access necessary financial services in an appropriate form. In contrast, Amidžić et al. (2014) and Sarma (2008) directly define financial inclusion. Amidžić et al. (2014) state that financial inclusion is an economic state where individuals and firms are not denied access to basic financial services. This chapter follows the definition of Sarma (2008), as outlined in Chap. 1 of this volume, which views financial inclusion as a process that ensures the ease of access, availability, and usage of financial services for all members of society. Unlike the definition of Amidžić et al. (2014), Sarma's (2008) definition builds the concept of financial inclusion on several dimensions, including accessibility, availability, and usage, which can be discussed separately.

Although there is consensus on how financial inclusion is defined, there is no standard method by which it can be measured. Consequently, existing studies offer varying measures of financial inclusion. For instance, Honohan (2007, 2008) constructed a financial access indicator that captures the fraction of the adult population in a given economy with access to formal financial intermediaries. The composite financial access indicator was constructed using household survey data for economies with available data on financial access. For those economies for which no household survey on financial access was available, the indicator was derived using information on bank account numbers and GDP per capita. The dataset was constructed as a cross-section series using the most recent data as the reference year, which varies across economies. However, Honohan's (2007, 2008) measure provides a snapshot of financial inclusion and might not be applicable for understanding changes over time and across economies.

Amidžić et al. (2014) constructed a financial inclusion indicator as a composite indicator of variables pertaining to its dimensions, outreach

(geographic and demographic penetration), usage (deposit and lending), and quality (disclosure requirement, dispute resolution, and cost of usage).[3] Each measure is normalized, statistically identified for each dimension, and then aggregated using statistical weights. The aggregation technique follows a weighted geometric mean. A drawback of this approach is that it uses factor analysis method to determine which variables are to be included for each dimension. Therefore, it does not fully utilize all available data for each country. Furthermore, it assigns various weights for each dimension, which implies the importance of one measure versus another.

In Chap. 1, Sarma followed a different approach to construct the indicator. The author first computed a dimension index for each dimension of financial inclusion and then aggregated each index as the normalized inverse of Euclidean distance, where the distance is computed from a reference ideal point, and then normalized by the number of dimensions included in the aggregate index. The advantage of this approach is its ease of computation and the fact that it does not impose varying weights for each dimension. For these reasons, this chapter closely follows Sarma's (2008) approach.

Previous studies have also looked into the impact of financial inclusion on poverty and income inequality. Burgess and Pande (2005) found that state-led expansion of rural bank branches in India helped reduce poverty. Specifically, the authors found robust evidence that opening bank branches in rural unbanked locations in India was associated with reduction in rural poverty rates in those areas. Similarly, Brune et al. (2011) found that increased financial access through commitment saving accounts in rural Malawi improved the well-being of poor households as it provided access to their savings for agricultural input use. Allen et al. (2013) found that increased bank penetration of commercial banks has positive and significant impact on household's use of bank accounts and bank credit particularly those with low income, no salaried job, and less education in Kenya. Their results suggest that increased bank activity

[3] Although Amidžić et al. (2014) defined proxies for a measure of quality, they did not include it in their composite indicator due to lack of reliable and available data.

can impact poverty and income inequality especially if bank penetration focuses on microfinance.

Unlike Amidžić et al. (2014) and Sarma (2008), Honohan (2008) constructed a financial access indicator for 160 economies that combines both household survey datasets and published financial institutions data into a composite indicator. Honohan's (2008) indicator uses financial access data from household surveys for countries with available data. For those countries, without household financial access survey data, the indictor is constructed as a function of the average size of bank account for each country. Using the financial access indicator, he assessed country characteristics that might influence financial access. The variables tested, aid as percent of gross national income (GNI), age dependency ratio, and population density significantly lower financial access, while mobile phone subscription and quality of institutions significantly increase financial access. Looking at the cross-country link between poverty and financial access, Honohan's results showed that financial access significantly reduces poverty, but only when financial access is the sole regressor; financial access loses significance when other variables are added as regressors.

In an earlier version of his paper, Honohan (2007) tested the significance of his financial access indictor in reducing income equality. His results show that higher financial access significantly reduces income inequality as measured by the Gini coefficient. However, the link between the two variables depends on which specification is used, i.e., when the access variable is included on its own and/or includes financial depth measure, the results are significant, but the same does not hold when per capita income and dummy variables are included.

Rojas-Suarez (2010) used the same indicator constructed by Honohan (2008) to test the significance of various macroeconomic and country characteristics for a group of emerging economies, including some from developing Asia. The results show that economic volatility, weak rule of law, higher income inequality, and social underdevelopment and regulatory constraints significantly lower financial access. In addition, various country grouping dummy variables were also found to be significant, especially for large emerging economies. However, unlike the estimation of Honohan, Rojas-Suarez (2010) used weighted least squares estimation to account for heteroskedasticity in their sample.

Financial Inclusion Indicator

Before testing the significance of financial inclusion in reducing poverty and lowering income inequality in developing Asia, we first constructed our own financial inclusion indicator. The motivations for constructing our own financial inclusion indicator are as follows: (1) we needed to include as many economies as possible in our sample, and using previously computed indicators would have limited our sample size, which can lead to biased results; (2) there is a need to develop a consistent measure of financial inclusion for a large sample of economies, which will be used to standardize the measure for all countries including those in developing Asia; and (3) we can compare our own financial inclusion indicator with previous measures.

We closely followed the methodology of Sarma (2008) in constructing our financial inclusion indicator. Specifically, we included five measures—namely, number of automated teller machines per 100,000 adults, number of commercial bank branches per 100,000 adults, borrowers from commercial banks per 1000 adults, depositors with commercial banks per 1000 adults, and domestic credit to GDP ratio. The first two measures pertain to availability of banking services as a dimension of financial inclusion, while the last three refer to the usage dimension of financial inclusion. All indicators are sourced from the World Bank's World Development Indicators, and each indicator for each economy pertains to the average value from 2004 to 2012. We chose to use period average values, instead of focusing on a particular year, to avoid annual fluctuations and to include as many economies as possible. In total, data for 177 economies are included, including 37 economies from developing Asia.

After computing the period average for each financial inclusion indicator for 177 economies, we then calculated the dimension index, following the specification of Sarma (2008), where the dimension index for *i*th dimension d_i is derived as:

$$d_i = \frac{A_i - m_i}{M_i - m_i} \tag{3.1}$$

where A_i is the actual value of dimension i, m_i is the minimum value of dimension i, and M_i is the maximum value of dimension i. The index of financial inclusion for country i is then measured by the normalized inverse of the Euclidean distance of point d_i computed in Eq. (3.1) from the ideal point I which is equal to 1. Specifically, the formula is given by:

$$FII_i = 1 - \frac{\sqrt{(1-d_1)^2 + (1-d_2)^2 + \ldots + (1-d_n)^2}}{\sqrt{n}} \tag{3.2}$$

where the second term of the numerator in Eq. (3.2) is the Euclidean distance from an ideal point, normalizing it by the square root of the number of observations and subtracting it from 1, giving the inverse normalized distance. We normalized the indicator to make the computed values lie between 0 and 1, where 1 corresponds to the highest financial inclusion index and 0 is the lowest, following Sarma (2008).

One difference between our measure and Sarma's (2008) indicator is that we include all available data regardless of dimension. In Sarma's (2008) indicator, domestic credit and domestic deposit were included as measures of the usage dimension. In our index, we include borrowers and depositors on commercial banks, along with domestic credit (% of GDP) as a measure of usage. The main reason for this is to increase our sample size. If we restrict our variables to those used by Sarma (2008), we will have a smaller sample size. Using the above-mentioned five measures makes our indicator more precise as it utilizes all available information.

Table 3.1 presents our computed financial inclusion indicator. Several observations are noted. First, advanced countries tend to have higher financial inclusion than emerging and developing economies. This observation is similar to that of Honohan (2008) and Sarma (2008). In fact, our ranking is highly consistent with that of Sarma (2008). Second, some small, developing economies have very high financial inclusion indicators. For instance, St. Kitts and Nevis, the Bahamas, Antigua and Barbuda, Aruba, and Grenada fall in the top one-third of the ranking table, perhaps due to fact that these countries

Table 3.1 Financial inclusion index

Country	FII	Rank	Country	FII	Rank	Country	FII	Rank
Spain	90.98	1	Seychelles	39.68	61	West Bank and Gaza	19.50	121
Portugal	81.97	2	Cabo Verde	39.13	62	Egypt, Arab Rep.	18.77	122
Luxembourg	81.96	3	Romania	38.94	63	Swaziland	18.33	123
United States	80.10	4	Serbia	37.74	64	Bolivia	18.10	124
Iceland	79.72	5	Lithuania	37.70	65	Bangladesh	16.75	125
Japan	78.32	6	Barbados	37.66	66	Nicaragua	16.68	126
Canada	74.90	7	Poland	37.35	67	Belarus	15.97	127
Switzerland	74.41	8	Jordan	37.11	68	Azerbaijan	15.54	128
Belgium	70.70	9	Costa Rica	37.09	69	Gambia, The	15.27	129
Australia	69.48	10	Slovak Republic	36.62	70	Bhutan	14.91	130
United Kingdom	68.95	11	Colombia	35.14	71	Paraguay	14.51	131
Korea, Rep.	68.89	12	Uruguay	34.21	72	Nepal	14.46	132
Denmark	68.30	13	Fiji	34.00	73	Kenya	13.42	133
Italy	67.48	14	Maldives	33.70	74	Pakistan	12.40	134
Ireland	66.99	15	Czech Republic	33.67	75	Nigeria	11.92	135
St. Kitts and Nevis	65.93	16	Dominica	33.04	76	Solomon Islands	11.56	136
Croatia	64.87	17	United Arab Emirates	32.60	77	Zimbabwe	11.50	137
France	63.51	18	Ecuador	32.33	78	Syrian Arab Republic	11.08	138
Estonia	61.96	19	Suriname	32.18	79	Mauritania	10.90	139
Bulgaria	59.71	20	Macedonia, FYR	31.03	80	Ghana	10.23	140
Israel	58.97	21	Uzbekistan	30.99	81	Algeria	9.62	141
Greece	58.73	22	Morocco	30.86	82	Tajikistan	9.36	142
New Zealand	58.73	23	Argentina	30.85	83	Togo	8.71	143
Netherlands	58.27	24	China	30.22	84	Kiribati	8.18	144
Singapore	58.24	25	Samoa	29.86	85	Lesotho	7.97	145

(*continued*)

Table 3.1 (continued)

Country	FII	Rank	Country	FII	Rank	Country	FII	Rank
Slovenia	57.64	26	St. Vincent and the Grenadines	29.80	86	Papua New Guinea	7.80	146
Germany	55.90	27	Guatemala	29.56	87	Haiti	7.62	147
Malta	55.63	28	Tunisia	29.29	88	Kyrgyz Republic	7.58	148
Austria	53.91	29	Iran, Islamic Rep.	28.43	89	Guinea	7.56	149
Brazil	53.66	30	Venezuela, RB	28.37	90	Angola	7.04	150
Bahamas, The	52.90	31	Kazakhstan	27.95	91	Cote d'Ivoire	6.99	151
Antigua and Barbuda	52.69	32	Georgia	27.57	92	Gabon	6.82	152
Brunei Darussalam	52.30	33	Tonga	27.49	93	Ethiopia	6.76	153
Latvia	51.68	34	Mexico	27.26	94	Malawi	6.54	154
Chile	51.08	35	Vanuatu	27.12	95	Cambodia	6.42	155
Lebanon	50.83	36	Dominican Republic	26.95	96	Djibouti	6.05	156
Hong Kong SAR, China	50.76	37	Albania	25.69	97	Sudan	5.74	157
Turkey	50.64	38	Honduras	25.50	98	Mali	5.49	158
Hungary	50.59	39	El Salvador	25.15	99	Mozambique	5.34	159
Aruba	47.39	40	Peru	24.87	100	Benin	5.31	160
Malaysia	47.09	41	Myanmar	24.85	101	Zambia	5.08	161
Oman	46.42	42	Indonesia	24.36	102	Timor-Leste	5.06	162
Ukraine	46.26	43	Saudi Arabia	24.34	103	Tanzania	5.01	163
Sweden	45.96	44	India	24.14	104	Equatorial Guinea	4.90	164
Thailand	45.59	45	Moldova	24.00	105	Uganda	4.82	165
Grenada	44.78	46	Armenia	23.81	106	Sierra Leone	4.35	166
Finland	44.03	47	Botswana	23.60	107	Lao PDR	4.22	167
Mongolia	44.02	48	Liberia	22.79	108	Burundi	4.02	168
South Africa	43.61	49	Libya	22.59	109	Rwanda	3.97	169

Montenegro	43.31	50	Trinidad and Tobago	22.03	110	Yemen, Rep.	3.93	170
Russian Federation	43.22	51	Afghanistan	21.95	111	Comoros	3.61	171
Panama	43.00	52	Vietnam	21.28	112	Central African Republic	2.83	172
Norway	42.35	53	Congo, Dem. Rep.	20.88	113	Madagascar	2.75	173
Belize	42.27	54	Jamaica	20.88	114	Cameroon	2.58	174
Kuwait	42.01	55	Chad	20.71	115	Guinea-Bissau	2.49	175
St. Lucia	40.87	56	Namibia	20.71	116	Congo, Rep.	2.38	176
Qatar	40.60	57	Sao Tome and Principe	20.42	117			
Kosovo	40.46	58	Sri Lanka	20.17	118			
Bosnia and Herzegovina	39.90	59	Guyana	19.66	119			
Mauritius	39.70	60	Philippines	19.63	120			

Source: Authors' calculations

Note: *FII* financial inclusion index

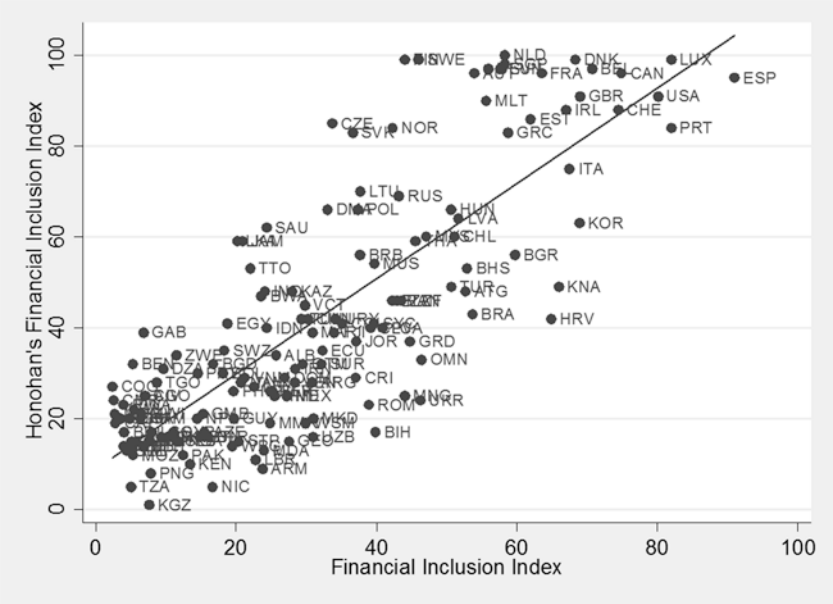

Fig. 3.1 Financial inclusion indicator and Honohan's (2008) indicator

are offshore financial centers. Third, our computed financial inclusion indicator follows the same pattern as those of Honohan (2008) and Sarma (2008).

Figure 3.1 shows the comparison with Honohan's (2008) indicator, and Fig. 3.2 with Sarma's (2008) measure. For economies where we calculated a high (or low) financial inclusion indicator, both Honohan (2008) and Sarma (2008) also computed a high (or low) level of financial inclusion, suggesting that the various measures give similar results. Last, across developing Asia, there is variation in the level of financial inclusion. Figure 3.3 illustrates that some economies in Asia have very high financial inclusion, while others have very low financial inclusion. The median level of financial inclusion is 24. Surprisingly, some developing economies in Asia have higher-than-expected financial inclusion, such as Mongolia, Fiji, the Maldives, Uzbekistan, and Samoa.

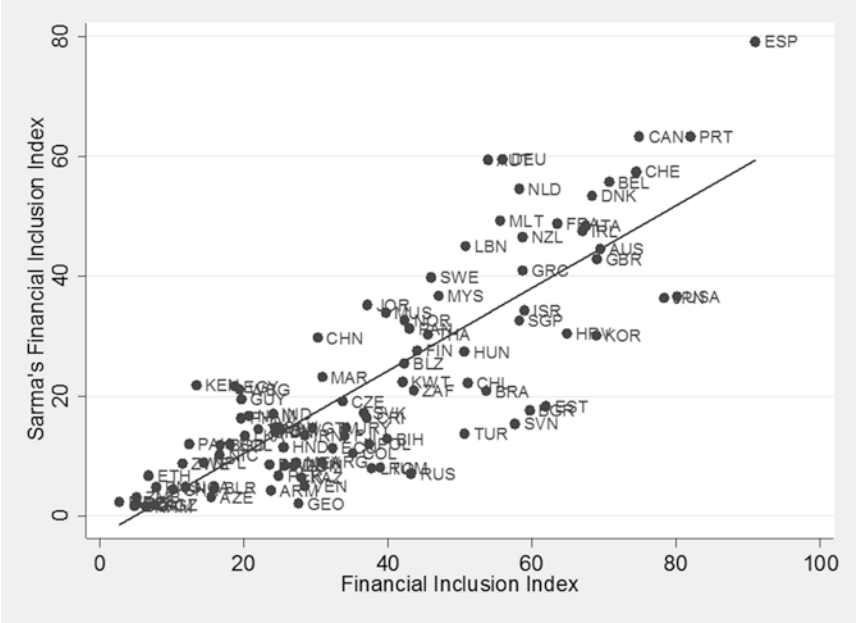

Fig. 3.2 Financial inclusion indicator and Sarma's (2008) indicator

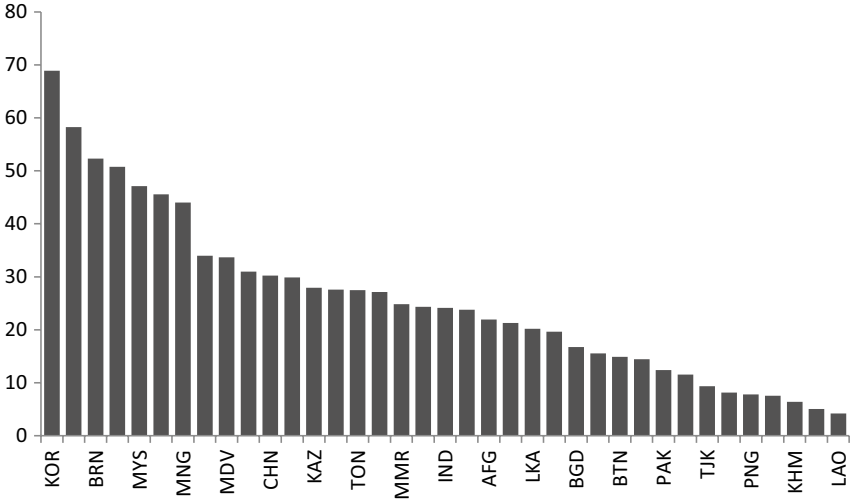

Fig. 3.3 Financial inclusion indicator, developing Asia

Empirical Methodology and Data Sources

In order to answer the main research questions in this chapter, we ran three regression models. First, we tested which factors significantly increase or decrease financial inclusion for both full and developing Asia samples. Using the computed financial inclusion indicator for the 177 economies, including 37 economies from the developing Asia region presented in the previous section, we used its log value as the dependent variable and tested the significance of various regressors, following Honohan's (2008) regressors.

We tested the significance of per capita income and found that higher per capita income increases financial inclusion as those with insufficient income and high risk profiles will no longer be excluded from financial services (Fig. 3.4). Better rule of law should also increase financial

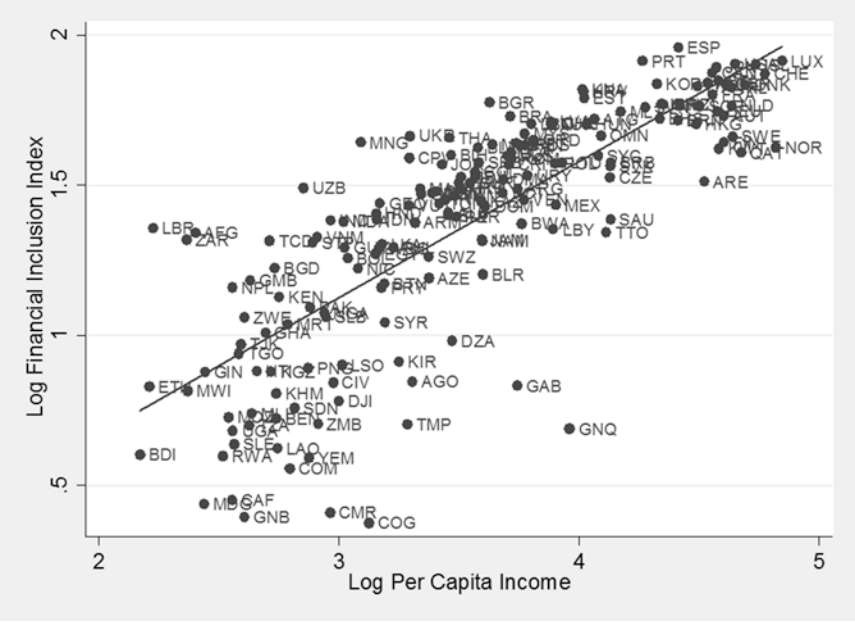

Fig. 3.4 Per capita income and financial inclusion

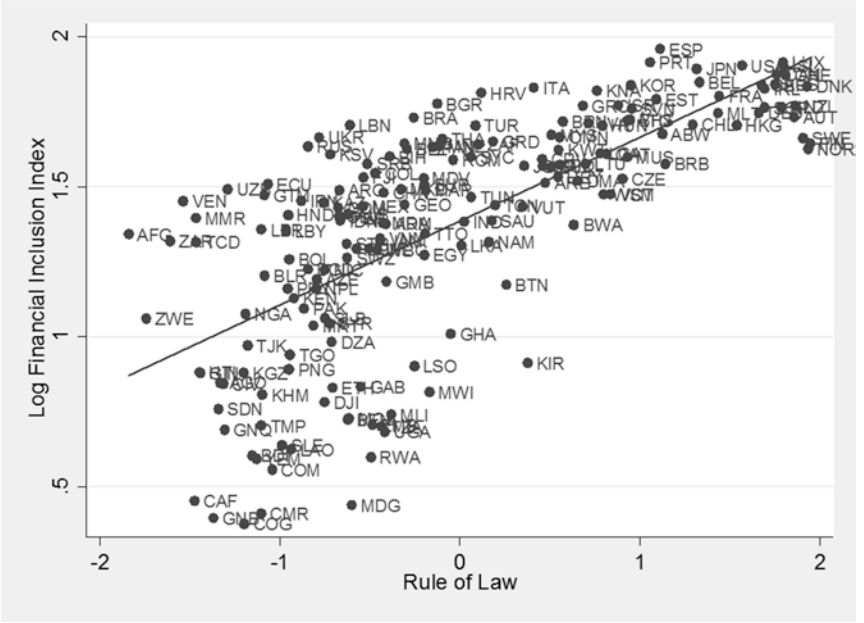

Fig. 3.5 Rule of law and financial inclusion

inclusion as it improves enforcement of financial contracts (Fig. 3.5). A higher age dependency ratio should reduce financial inclusion as a larger segment of the population are either too young or above the retirement age, which impedes their access to financial services as they do not earn income (Fig. 3.6). In contrast, a larger population should increase financial access as it indicates a larger market size. Higher primary school completion and literacy rates should also lead to higher access to financial services (Fig. 3.7). We also controlled for country income classification and the developing Asia region using dummy variables.[4]

After testing the significance of the above-mentioned indicators on financial access, we examined the significance of financial inclusion in reducing poverty rates. We expected that as financial inclusion increases,

[4] We based our country income classification using World Bank classification. Advanced countries refer to those which are members of OECD, developing countries are low-income countries, and the rest are classified as emerging economies.

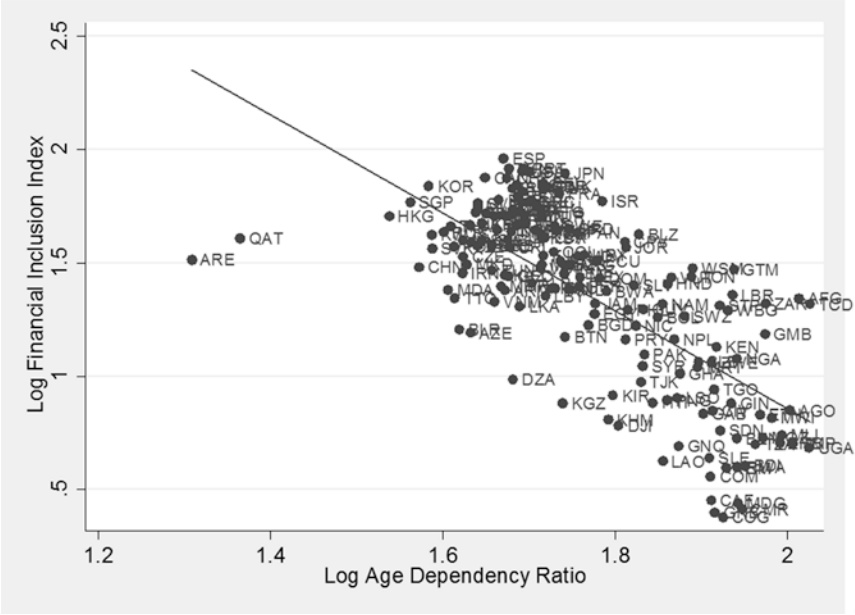

Fig. 3.6 Age dependency ratio and financial inclusion

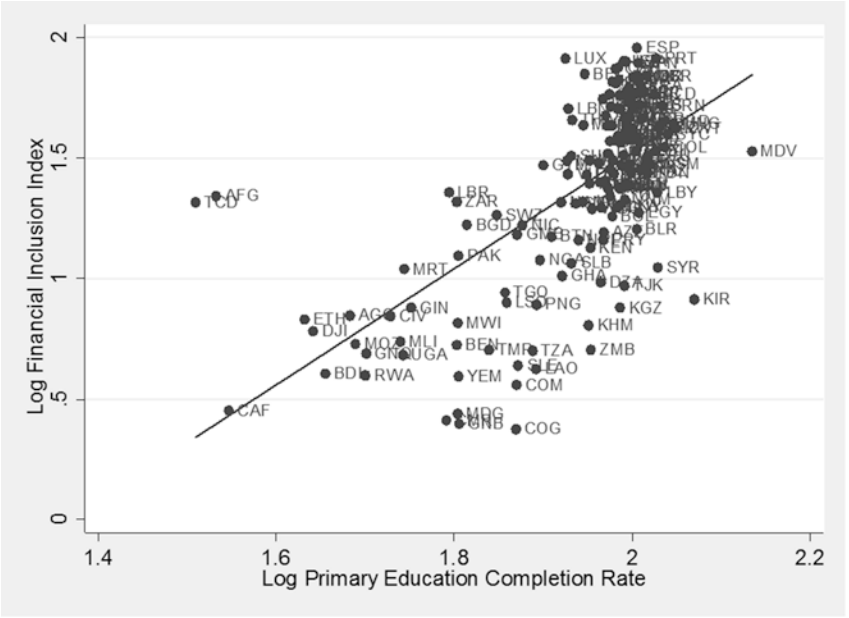

Fig. 3.7 Primary school completion and financial inclusion

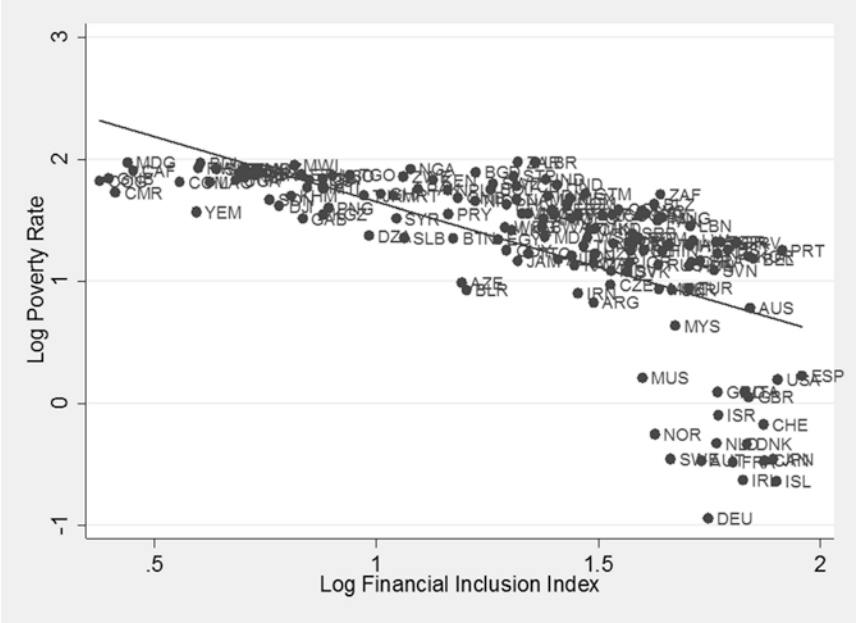

Fig. 3.8 Financial inclusion and poverty

poverty rates should decline as more people have access to financial services to smooth their consumption and engage in productive activities. Figure 3.8 illustrates the negative relationship between poverty rates and financial inclusion. We also considered several indicators apart from poverty rate: (1) Ratio of highest to lowest 20 % income group to account for income inequality; (2) Inflation as a measure of macroeconomic stability or an indicator of wealth distribution between debtor and creditor; (3) Primary school completion ratio, which tends to reduce poverty rates; and (4) Growth in bank claims, which measures financial depth. We also controlled for advanced and developing economies as well as developing Asia using dummy variables. In addition, we included growth rates, rule of law, and an interaction term between per capita income and financial inclusion in some specifications.

Finally, we test the significance of financial inclusion and other variables on income inequality. We expect that as financial inclusion increases, income inequality should decline as more people at the lower income strata

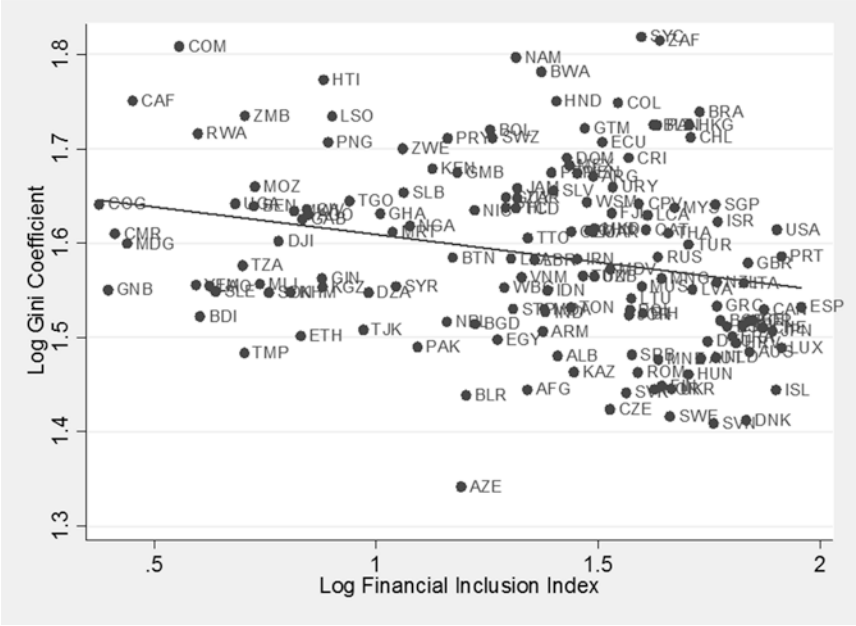

Fig. 3.9 Financial inclusion and income inequality

will have access to financial services. Figure 3.9 shows that there is a weak relationship between financial inclusion and income inequality.[5] We also test the significance of inflation, primary school completion, and growth in bank claims. Similar to the previous specification, we also control for advanced and developing economies as well as developing Asia using dummy variables and include growth rates, rule of law, and an interaction term between poverty and financial inclusion in some specifications.

Data are sourced from the World Bank's World Development Indicators, Global Financial Development Database, and Worldwide Governance Indicators. Data on poverty rates refer to poverty headcount ratio at the national poverty line as a percent of total population, while income inequality refers to the Gini index. For economies with unavailable data on poverty rates and Gini coefficients, data were sourced from the Key

[5] Honohan (2007) and Rojas-Suarez (2010) found a negative relationship between financial inclusion and income inequality for their full sample series.

Indicators of the Asian Development Bank and national sources accessed online. In cases where some countries do not have available poverty and income inequality measures from 2004 onwards, we used earlier measures. Age dependency ratio refers to the ratio of dependents to working-age population. Inflation is the year-on-year change in consumer price index. Per capita income refers to GNI per capita at constant $2005 prices. Literacy rate is the percentage of people ages 15 and above who can, with understanding, read and write a short, simple statement on their everyday life. Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts as well as the likelihood of crime and violence. Data are taken from the Worldwide Governance Indicators. Primary education completion rate is the percentage of students completing the last year of primary school expressed as a percentage of the relevant age group. Growth rate refers to the year-on-year change of real GDP. Growth in bank claims refers to the annual growth of bank claims to the private sector as a percent of broad money.

Cross-sectional data for each indicator refers to the average values from 2004 to 2012, whenever data is available. All variables are expressed in log scale, except for the rule of law index. Both advanced and developing economies dummy variables follow the World Bank classifications. The advanced economy dummy variable takes a value of 1 if it is an advanced economy, and 0 otherwise. The same follows for developing economies which corresponds to low-income countries. We limit the number of regressors in our model specifications, given that our sample size for developing Asia is relatively small. Adding more regressors in our specifications will compromise the efficiency of our estimates as additional regressors will use up degrees of freedom for our developing Asia sample. To address heteroskedasticity, robust standard errors are used.

Empirical Results

Tables 3.2 and 3.3 present the estimates for financial inclusion indicator for the full sample and the developing Asia sample, respectively. Various specifications were used to test the robustness of the results and address

Table 3.2 Regression results financial inclusion, full sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Per capita GNI (log)	0.449***	0.270***	0.413***			0.232***	0.004
	[9.990]	[4.655]	[8.456]			[3.229]	[0.167]
Rule of law (log)				0.112***	0.210***	0.066*	0.116***
				[4.399]	[6.709]	[1.866]	[3.555]
Dependency ratio (log)		−0.585**		−0.996***		−0.543**	−0.952***
		[−2.334]		[−4.318]		[−2.136]	[−3.897]
Population (log)			0.028		0.047**	0.026	0.016
			[1.391]		[2.152]	[1.299]	[0.784]
Education completion (log)		0.880**		0.888**		0.866**	0.869**
		[2.342]		[2.335]		[2.411]	[2.296]
Literary (log)			0.560**		1.018***	−0.073	0.056
			[2.238]		[3.863]	[−0.276]	[0.218]
Advanced countries	0.006	0.095*	−0.008	0.140***	−0.002	0.021	0.113*
	[0.122]	[1.874]	[−0.157]	[2.828]	[−0.028]	[0.370]	[1.823]
Developing countries	−0.043	0.045	0.039	−0.046	−0.086	0.018	−0.044
	[−0.559]	[0.555]	[0.442]	[−0.600]	[−0.887]	[0.208]	[−0.541]
Developing Asia	0.090*	0.017	0.071	−0.037	−0.008	0.010	−0.038
	[1.961]	[0.326]	[1.522]	[−0.725]	[−0.151]	[0.182]	[−0.744]
Constant	−0.231	−0.290	−1.368***	1.398	−0.871	−0.216	1.138
	[−1.405]	[−0.345]	[−2.837]	[1.405]	[−1.575]	[−0.231]	[1.003]
Observations	173	164	173	166	176	164	166
R-squared	0.631	0.696	0.647	0.678	0.598	0.704	0.679

Source: Authors' estimates

Note: Values in brackets are t-stat. ***, **, and * refer to significance at 1%, 5%, and 10%, respectively

Table 3.3 Regression results financial inclusion, developing Asia

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Per capita GNI (log)	0.454***	0.338***	0.439***			0.262*	−0.009
	[6.734]	[3.537]	[6.256]			[1.730]	[−0.087]
Rule of law (log)				0.181***	0.250***	0.100	0.204**
				[3.174]	[5.411]	[1.155]	[2.470]
Dependency ratio (log)		−0.889*		−1.232***		−0.462	−0.926*
		[−1.833]		[−3.657]		[−0.846]	[−2.034]
Population (log)			0.065**		0.077**	0.043	0.019
			[2.262]		[2.501]	[1.155]	[0.463]
Education completion (log)		−0.008		−0.199		−0.412	−0.812
		[−0.014]		[−0.299]		[−0.474]	[−0.878]
Literary (log)			0.518		0.769	0.588	0.780
			[0.960]		[1.513]	[1.058]	[1.365]
Developing countries	0.191	0.219	0.231	0.160	0.194	0.216	0.174
	[1.655]	[1.674]	[1.499]	[1.503]	[1.384]	[1.474]	[1.408]
Constant	−0.183	1.764	−1.586	3.902**	−0.633	0.655	2.930
	[−0.735]	[1.123]	[−1.511]	[2.466]	[−0.614]	[0.298]	[1.398]
Observations	36	36	36	37	37	36	37
R-squared	0.499	0.570	0.570	0.536	0.500	0.599	0.556

Source: Authors' estimates

Note: Values in brackets are t-stat. ***, **, and * refer to significance at 1 %, 5 %, and 10 %, respectively

multicollinearity among the regressors. Specifications (1)–(3) include per capita income and other determinants, while specifications (4) and (5) include rule of law and other determinants. Specifications (6) and (7) include all regressors. We separated both per capita income and rule of law in specifications (1)–(5) because these two variables are highly correlated.[6] We also addressed potential multicollinearity between the two variables in specification (7) where we used standardized values of the two variables.

The results show that among the country characteristics for the full sample (Table 3.2), per capita income, rule of law, demographic structure, primary education completion, and literacy are significantly correlated with the level of financial inclusion. Specifically, higher per capita income, rule of law, population size, primary school completion, and literacy are significantly associated with higher financial inclusion, and a higher age dependency ratio is significantly associated with lower financial inclusion. The estimates also reveal that when both per capita income and rule of law are considered, per capita income loses its significance, suggesting that rule of law is the main determinant for financial inclusion for the full sample and that involuntary financial exclusion across countries is likely driven largely by market failures and weak enforcement of contracts rather than insufficient household income and high risk profiles. These results are consistent with the findings of Honohan (2008). However, unlike the estimates of Honohan (2008), we found robust evidence of the importance of per capita income on financial inclusion. These findings also hold true for the developing Asia sample (Table 3.3), except that primary education completion and literacy are not significantly correlated with financial inclusion.

Tables 3.4 and 3.5 show the results of the conditional correlation of financial access on poverty for full and developing Asia samples, respectively. Across specifications, we added other variables used by Honohan (2008) on the regressors of poverty rate and also added specifications with the interaction term between per capita income and financial inclusion as well as growth rates and rule of law. Our estimates offer further evidence that there is a strong correlation between higher financial inclusion and lower poverty rates for both the full sample and the developing Asia sample.

[6] The pairwise correlation between rule of law and per capita income is around 0.80, which is high.

Table 3.4 Regression results poverty, full sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financial inclusion (log)	−0.479***		−0.335***	−0.541***	−0.506***	−0.421***	−0.412***	−0.412***
	[−7.570]		[−4.699]	[−7.765]	[−7.482]	[−5.357]	[−5.215]	[−5.215]
Ratio of highest to lowest 20 % income				0.463***	0.514***	0.553***	0.592***	0.592***
				[3.156]	[3.580]	[3.642]	[4.140]	[4.140]
Inflation (log)					0.259**	0.296**	0.247*	0.247*
					[2.207]	[2.266]	[1.932]	[1.932]
Education completion (log)						−0.618***	−0.626***	−0.626***
						[−2.706]	[−2.747]	[−2.747]
Bank claims (log)							0.053	0.053
							[0.521]	[0.521]
GDP growth (log)			0.322**					
			[2.543]					
Rule of law (log)			−0.154***					
			[−2.624]					
GNI * Financial inclusion		−0.142***						
		[−8.222]						

(*continued*)

Table 3.4 (continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Advanced countries	−0.940***	−0.681***	−0.634***	−0.938***	−0.801***	−0.781***	−0.692***	−0.692***
	[−6.405]	[−4.492]	[−3.559]	[−6.132]	[−4.813]	[−4.496]	[−3.379]	[−3.379]
Developing countries	0.190***	0.072	0.153***	0.194***	0.195***	0.122**	0.132**	0.132**
	[4.222]	[1.540]	[3.627]	[3.447]	[3.700]	[2.415]	[2.602]	[2.602]
Developing Asia	0.018	−0.007	−0.028	0.094	0.103	0.124*	0.132*	0.132*
	[0.309]	[−0.114]	[−0.453]	[1.338]	[1.499]	[1.699]	[1.880]	[1.880]
Constant	2.079***	2.099***	1.634***	1.714***	1.412***	2.433***	2.382***	2.382***
	[26.227]	[27.876]	[11.415]	[10.110]	[7.002]	[6.283]	[6.090]	[6.090]
Observations	154	153	150	138	137	132	120	120
R-squared	0.655	0.686	0.688	0.723	0.723	0.727	0.700	0.700

Source: Authors' estimates

Note: Values in brackets are t-stat. ***, **, and * refer to significance at 1 %, 5 %, and 10 %, respectively

Table 3.5 Regression results poverty, developing Asia

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Financial inclusion (log)	−0.482***		−0.496***	−0.485***	−0.442***	−0.404***	−0.363***	−0.363***
	[−4.664]		[−3.978]	[−4.999]	[−4.352]	[−3.807]	[−3.220]	[−3.220]
Ratio of highest to lowest 20 % income				0.032	0.182	0.230	0.286	0.286
				[0.075]	[0.394]	[0.477]	[0.587]	[0.587]
Inflation (log)					0.220	0.263	0.389	0.389
					[0.803]	[0.911]	[1.168]	[1.168]
Education completion (log)						−0.352	−0.387	−0.387
						[−0.852]	[−0.813]	[−0.813]
Bank claims (log)							−0.018	−0.018
							[−0.108]	[−0.108]
GDP growth (log)			−0.053					
			[−0.260]					
Rule of law (log)			0.003					

Table 3.5 (continued)

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			[0.060]					
GNI * Financial inclusion		–0.097***						
		[–3.917]						
Developing countries	0.221***	0.152*	0.225**	0.226**	0.219**	0.171*	0.151	0.151
	[2.920]	[1.805]	[2.539]	[2.137]	[2.051]	[1.723]	[1.498]	[1.498]
Constant	2.069***	1.866***	2.128***	2.048***	1.699***	2.270***	2.171**	2.171**
	[16.224]	[17.577]	[9.674]	[5.444]	[3.098]	[2.884]	[2.455]	[2.455]
Observations	33	33	33	33	33	33	32	32
R-squared	0.398	0.405	0.400	0.399	0.413	0.423	0.431	0.431

Source: Authors' estimates

Note: Values in brackets are t-stat. ***, **, and * refer to significance at 1 %, 5 %, and 10 %, respectively

Across specifications, financial inclusion appears significant and with a negative sign. Our results for the full sample regression (Table 3.4) also show a significant correlation between educational attainment and lower poverty rates, although not for the developing Asia sample (Table 3.5). This finding is consistent with the view that education reduces poverty as it enables individuals to acquire and use knowledge and skills that increase their employment prospects and, therefore, earn higher wages. As expected, low-income economies tend to have higher poverty rates, while advanced economies have lower poverty rates. This holds true for both the full and the developing Asia samples. Another interesting finding is that for developing Asia, financial inclusion appears to be the only variable significantly associated with poverty rates, unlike for the full sample regression where other variables are significantly correlated. Last, the interaction term between per capita income and financial inclusion is significantly correlated with lower poverty rates for both samples, giving further support to the importance of raising income levels in lowering poverty rates.

Tables 3.6 and 3.7 present the results of the significance of financial inclusion on income inequality for both the full and developing Asia samples. The specifications and variables closely follow those of Tables 3.4 and 3.5, except that we dropped the proportion of high-income to low-income groups, and replaced the interaction term with poverty rate. Our estimates show that there is no significant conditional correlation between income inequality and financial inclusion across all specifications and for the two samples. A possible explanation for this is that when financial inclusion increases, all income groups are affected, in which case the impact disappears for income inequality measure using the Gini coefficient. Among the other determinants of income inequality, inflation is more significantly correlated with lower income inequality for developing Asia (Table 3.7) than for the full sample (Table 3.6). The economic literature has long debated the impact of inflation on income inequality. On one hand, some papers argue that higher inflation tends to redistribute wealth between creditor and debtor, with the latter repudiating debt when unexpected inflation is high. This helps reduce income inequality especially among the heavily indebted lower-income

Table 3.6 Regression results income inequality, full sample

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Financial inclusion (log)	0.004		−0.005	−0.002	−0.017	−0.006	−0.006
	[0.181]		[−0.214]	[−0.111]	[−0.628]	[−0.198]	[−0.198]
Inflation (log)				−0.061**	−0.076***	−0.040	−0.040
				[−2.219]	[−2.662]	[−1.218]	[−1.218]
Education completion (log)					0.062	0.092	0.092
					[0.776]	[0.992]	[0.992]
Bank claims (log)						−0.097***	−0.097***
						[−2.929]	[−2.929]
GDP growth (log)			0.010				
			[0.286]				
Rule of law (log)			0.010				
			[0.765]				
Poverty * Financial inclusion		0.023***					
		[2.753]					
Advanced countries	−0.113***	−0.080***	−0.129***	−0.137***	−0.143***	−0.126***	−0.126***
	[−5.292]	[−3.805]	[−3.900]	[−5.738]	[−5.926]	[−4.879]	[−4.879]
Developing countries	0.005	0.008	0.008	0.005	−0.002	−0.003	−0.003
	[0.277]	[0.423]	[0.422]	[0.288]	[−0.104]	[−0.163]	[−0.163]
Developing Asia	−0.057***	−0.059***	−0.057***	−0.056***	−0.059***	−0.057***	−0.057***
	[−3.355]	[−3.549]	[−3.433]	[−3.450]	[−3.580]	[−3.541]	[−3.541]
Constant	1.617***	1.581***	1.627***	1.674***	1.587***	1.590***	1.590***
	[57.749]	[92.771]	[41.314]	[45.546]	[11.371]	[10.150]	[10.150]
Observations	154	151	150	153	146	131	131
R-squared	0.231	0.256	0.237	0.250	0.270	0.280	0.280

Source: Authors' estimates

Note: Values in brackets are t-stat. ***, **, and * refer to significance at 1 %, 5 %, and 10 %, respectively

Table 3.7 Regression results income inequality, developing Asia

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Financial inclusion (log)	0.050		−0.030	−0.001	−0.016	−0.036	−0.036
	[1.177]		[−0.696]	[−0.015]	[−0.424]	[−0.870]	[−0.870]
Inflation (log)				−0.190***	−0.200***	−0.171**	−0.171**
				[−3.095]	[−3.225]	[−2.326]	[−2.326]
Education completion (log)					0.144***	0.240**	0.240**
					[3.734]	[2.352]	[2.352]
Bank claims (log)						−0.084	−0.084
						[−1.048]	[−1.048]
GDP growth (log)			−0.058				
			[−0.748]				
Rule of law (log)			0.043**				
			[2.556]				
Poverty * Financial inclusion		0.038					
		[0.986]					
Developing countries	−0.069***	−0.083***	−0.039*	−0.047*	−0.026	−0.021	−0.021
	[−2.765]	[−3.939]	[−1.766]	[−2.000]	[−1.290]	[−0.978]	[−0.978]
Constant	1.507***	1.502***	1.667***	1.719***	1.463***	1.367***	1.367***
	[24.978]	[19.003]	[18.970]	[20.524]	[10.967]	[7.717]	[7.717]
Observations	33	33	33	33	33	32	32
R-squared	0.146	0.150	0.291	0.329	0.352	0.419	0.419

Source: Authors' estimates

Note: Values in brackets are t-stat. ***, **, and * refer to significance at 1 %, 5 %, and 10 %, respectively

households. On the other hand, higher inflation is associated with stronger economic growth, which in turn can increase income inequality.[7] Our estimates favor the former explanation, where higher inflation leads to lower income inequality in developing Asia, due to wealth redistribution effects. Our results also show that primary school completion is significantly associated with higher income inequality in developing Asia but not for the full sample, possibly related to stronger wage and skills differentials in the region.

To conduct sensitivity tests, we tested our findings using Honohan's (2007, 2008) and Sarma's (2008) indicators. Our estimates on financial inclusion in Tables 3.2 and 3.3 hold for both the full and developing Asia samples. Using Honohan's (2007, 2008) and Sarma's (2008) indicators, we also confirmed that higher financial inclusion and primary education completion are significantly correlated with lower poverty rates. Last, we checked for income inequality. We found Sarma's measure to be significant to only one specification at 10% level of significance, hence the correlation is weak. But for the rest of the variables, again there is no significant correlation with higher financial inclusion and lower income inequality. Based on these sensitivity tests, we argue that we have similar findings on financial inclusion, poverty, and income inequality using our measure, Honohan's (2008) and Sarma's (2008) measures.

Summary and Policy Implications

To test whether financial inclusion helps reduce poverty and income inequality across countries and in developing Asia, we constructed our own financial inclusion indicator for 177 economies including 37 from the developing Asia region using various dimensions of financial inclusion, such as availability and usage. We closely follow the methodology of Sarma (2008), although we utilized more data in our indicator. Our financial inclusion indicator showed a similar pattern (in terms) of ranking as those of Honohan (2008) and Sarma (2008). We then tested which factors significantly influence financial

[7] See Sarel (1997) for a discussion of the determinants of income inequality and inflation.

inclusion. Our estimates show the importance of per capita income, rule of law, and demographic factors for both the full and developing Asia samples. Next, we tested whether financial inclusion in the region is significantly correlated with lower poverty and income inequality. Our findings show a robust and significant correlation between higher financial inclusion and lower poverty but not between financial inclusion and income inequality. The findings are robust using Honohan's (2008) and Sarma's (2008) financial access indicators. Based on our empirical results, we offer several policy implications.

First, the demographic characteristics of economies in developing Asia are significantly related to the level of financial inclusion. Economies with large population sizes tend to have greater access to financial services, while those with high dependency ratios have lower access to financial services. This has important policy implications, especially for economies with rapidly aging populations. For these economies, the provision of retirement pensions and other old-age benefits would be crucial in broadening access to financial services of old-age population.

Second, similar to the findings of Honohan (2008) and Rojas-Suarez (2010), good governance and high institutional quality significantly increase financial inclusion. This suggests that to broaden financial access, economies in developing Asia must continue to improve the quality of governance and institutions, specifically by strengthening the rule of law, including enforcing financial contracts and providing regulatory oversight. Maintaining high-quality rule of law will reduce involuntary financial exclusion of large segments of the population.

Third, our estimates offer evidence of a strong correlation between financial access and poverty. To reduce poverty rates in the region, policymakers must implement policies that will address impediments to financial inclusion. In this regard, efforts to promote inclusive growth must complement those to increase financial inclusion. Of growing importance is the role of microfinance. If lower-income groups have access to credit, their access to financial services is improved, which in turn enables them to undertake productive activities and smooth their consumption in the face of short-term adverse shocks.

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4

Financial Inclusion and Monetary Policy in Emerging Asia

Aaron Mehrotra and G.V. Nadhanael

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Introduction

The degree of financial inclusion has important implications for firms and households in many emerging and developing economies.[1] Without access to formal financial institutions, and with relatively underdeveloped capital markets, firms may need to rely on retained earnings, or informal sources of funding for investment. Similarly, households may need to use their savings, or borrow from informal sources at exorbitant interest rates, to invest in human capital or start up small businesses. This underscores the importance of access to finance for economic growth and the promotion of income equality (e.g., Beck et al. 2007; Burgess and Pande 2005). Indeed, financial inclusion has been suggested to be "a tool for addressing critical issues of persistent poverty and underdevelopment" (Alliance for Financial Inclusion 2012, p. 6).

But the degree of financial inclusion is also of direct relevance for monetary policy. Perhaps the most obvious channel is through the importance of interest rates in the economy. In environments with limited financial inclusion, the direct impact of changes in interest rates on agents' inter-temporal decisions about consumption, investment, and savings may be weaker than in economies with nearly universal financial access. Policymakers have explicitly acknowledged the link between financial inclusion and the potency of monetary policy (Khan 2011; Tombini 2012). Theoretical research has discussed the implications of limited financial access for the policy reaction function of central banks (e.g., Galí et al. 2004; Bilbiie 2008), and for the effectiveness of monetary policy (Di Bartolomeo and Rossi 2007). More recently, the degree of financial inclusion has been argued to matter for optimal monetary policy outcomes in terms of output and inflation volatility (Mehrotra and Yetman 2014).

Given its importance, it is not surprising that many central banks in emerging markets have explicit objectives regarding financial inclusion.

[1] The Global Partnership for Financial Inclusion, launched by the G20 leaders to promote inclusion, has defined financial inclusion as "a state in which all working age adults, including those currently excluded by the financial system, have effective access to the following financial services provided by formal institutions: credit, savings (defined broadly to include current accounts), payments, and insurance." See Consultative Group to Assist the Poor (CGAP 2011).

For instance, within emerging Asia, the Reserve Bank of India has taken policy initiatives to facilitate branch expansion in poor areas and relaxed the requirements for opening bank accounts. It has also advised banks on financial products to ensure that the financial needs of customers are met (Chakrabarty 2013). The Central Bank of Malaysia Act 2009 explicitly incorporates financial inclusion as a central bank objective. Among various other measures to promote inclusion, the Bank Negara Malaysia—Malaysia's central bank—has an in-house centre that provides information about financial services to the public, highlighting the importance of financial literacy (Zeti 2005). The Bangko Sentral ng Pilipinas has made efforts to build a regulatory environment that supports financial inclusion, including in microfinance (Bangko Sentral ng Pilipinas 2013).

Internationally, many central banks, and other public sector institutions are members of the Alliance for Financial Inclusion (AFI), a member-driven peer learning framework. Some institutions have set quantifiable financial inclusion goals for their economies by signing the Maya Declaration.[2] The G20 has endorsed the Financial Inclusion Action Plan, recognising the importance of financial inclusion in the global development agenda (Global Partnership for Financial Inclusion 2014). The Bank for International Settlements hosts the secretariats for four standard-setting bodies engaged in addressing supervisory and regulatory issues.[3] Financial inclusion is very important for both national and international regulatory bodies, as financial exclusion carries risks and costs, including those associated with financial instability (Caruana 2012).

Despite the prominence of financial inclusion in national and international policy agendas, there is little empirical literature about the interaction between financial inclusion and monetary policy. In this chapter, we focus on two implications of financial inclusion for monetary policy. First, we empirically evaluate the interest rate sensitivity of output and prices in emerging Asian economies with different levels of financial inclusion. This is done both by estimating output Euler equations and examining

[2] Maya Declaration is the statement of AFI network commitment to financial inclusion.

[3] The Basel Committee on Banking Supervision; the Committee on Payments and Market Infrastructures; the International Association of Insurance Supervisors; and the International Association of Deposit Insurers.

the impact of interest rate shocks on output and prices in panel vector autoregressions. In previous theoretical modelling, the demand of credit-constrained households that are not able to smooth consumption is typically postulated to depend only on current period income, with no role for interest rates (Galí et al. 2004). Bilbiie and Straub (2012) present a model in which changes in asset market participation can lead to a change in the sign of the interest rate coefficient in the output Euler equation. Such considerations suggest that there could be important differences in the interest rate sensitivity of output and prices across economies, depending on the level of financial inclusion.

The second question of interest concerns the relationship between limited financial inclusion and the central bank's policy targets. Recent theoretical work by Anand et al. (2015) suggests that welfare enhancing monetary policy in economies with a high share of unbanked consumers and a large share of food in the consumption basket involves the targeting of headline instead of core inflation. Changes in food prices affect the real incomes, and thus consumption demand of the financially excluded, and should therefore be taken into account by policymakers when conducting macroeconomic stabilisation. We use consumption expenditure data from India to highlight how some of these interactions manifest themselves. Moreover, using data on real interest rate dynamics and core and headline inflation rates, we evaluate how closely the setting of the monetary policy stance by emerging Asian central banks resembles the theoretical model's predictions.

We find that the interest rate sensitivity of output and prices is somewhat higher in economies with a greater degree of financial inclusion. This conclusion arises from estimates of the real interest rate coefficient in output Euler equations and from vector autoregressions that consider impacts of nominal interest rate shocks on output and prices. However, in many cases, the differences between economies at different levels of financial access are small. This could stem from indirect effects of interest rate changes, whereby financially included consumers initially react to the change in monetary policy stance, with subsequent impacts on real wages, and thus consumption of the financially excluded households as well.[4] Moreover, we find evidence that in some emerging Asian economies with a significant

[4] See Di Bartolomeo and Rossi (2007) who outline this possibility in a theoretical model.

share of unbanked consumers, and a considerable portion of food in overall consumption, real interest rates have moved more closely with headline than core inflation, in line with Anand et al. (2015). Yet, the differences in the correlations that arise from the data appear to be small.

In this chapter, we do not consider the financial stability implications of financial inclusion. There are various channels through which greater financial inclusion affects financial stability, many of them relevant for central bank policies.[5] Financial stability may be enhanced by increased availability of core funding for banks as deposits increase; more diversified lending portfolios as lending to small and medium-size enterprises expands; and an improved monetary transmission mechanism. At the same time, inclusion may be detrimental for financial stability if lending standards are adversely affected, or unregulated parts of the financial system grow in importance.[6]

We also leave out many other issues that feature prominently in policy discussions related to financial inclusion. One pertains to the optimal supply-side response, seeking to determine how policymakers can best enhance financial inclusion, be it through efforts to increase financial literacy or through regulatory policies that allow for financial innovation, for example. Another, and no less important task, is to understand the demand side. Why do some consumers voluntarily choose to be financially excluded, while others resort to informal money lenders at very high interest rates instead of borrowing from formal financial institutions?

This chapter is structured as follows. The next section provides some stylised facts about the degree of financial inclusion in emerging Asian economies. Section 'Financial Inclusion and Monetary Policy: Some Theoretical Arguments' mentions previous, mostly theoretical, literature about the links between financial inclusion and monetary policy. This is followed by an investigation of the interest rate sensitivity of output and prices in section 'Empirical Evidence on Interest Rate Sensitivity', while section 'Financial Inclusion and Monetary Policy Targets' discusses

[5] See Mehrotra and Yetman (2015) for a discussion of the implications of financial inclusion for central banks more broadly.

[6] See Han and Melecký (2013), Hannig and Jansen (2010) and Morgan and Pontines (2014).

the implications of financial inclusion for the targets of monetary policy. Finally, we conclude in section 'Conclusion'.

Measuring Financial Inclusion in Emerging Asia

Examining the implications of financial inclusion for monetary policy requires a measure of the degree of financial access. While many economies produce comprehensive domestic estimates (e.g., India, Malaysia), the need for a consistent cross-country comparison implies that a measure available for a large sample of economies is preferable. The source for financial inclusion indicators used in this study is the World Bank's Global Findex database (Demirguc-Kunt and Klapper 2012; Demirguc-Kunt et al. 2015). The database covers over 140 economies, thus including both advanced and emerging countries. About 1000 persons were surveyed in each economy during each of the 2011 and 2014 calendar years.[7]

Figure 4.1 shows our benchmark indicator for financial inclusion: the share of population of age 15 or higher that has an account at a formal financial institution: a bank, credit union, cooperative, post office, or microfinance institution.[8] There is significant variation in terms of formal account ownership in our sample of emerging Asian economies.[9] The economies can be roughly divided into three groups. The first group comprises India, Indonesia, and the Philippines, and account ownership ranges between 28 % and 53 % of the population. In the second group, including China, Malaysia, and Thailand, between 78 % and 81 % of the population has an account at a formal financial institution. Finally, the level of account ownership in Hong Kong SAR, Korea, and Singapore, exceeding 90 %, is similar to that in the three major advanced economies shown as a comparison group in the figure. The global average in 2014 was 62 %. Between 2011 and 2014, emerging Asian economies recorded

[7] In some large economies, the number of persons surveyed was higher. For example, in 2014, the sample size was 3000 and more than 4000 in India and China respectively.

[8] Both individually and jointly owned accounts are included. Account ownership numbers also include those adults who reported having a debit or an ATM card.

[9] The sample comprises nine emerging Asian economies whose central banks are members of the BIS.

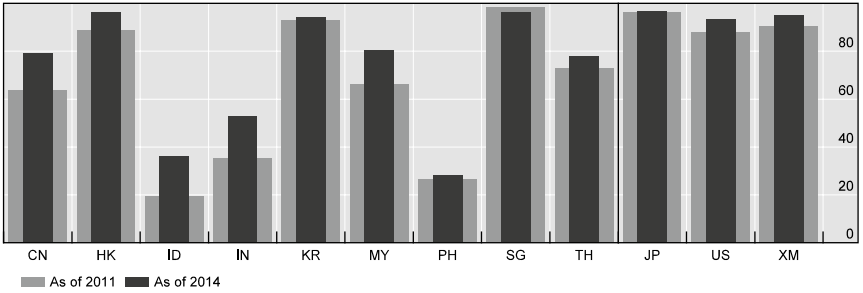

Fig. 4.1 Financial inclusion indicators: ownership of account. Share of adults who had an account at formal financial institution, in %. *CN* China, *HK* Hong Kong SAR, *ID* Indonesia, *IN* India, *KR* Korea, *MY* Malaysia, *PH* the Philippines, *SG* Singapore, *TH* Thailand, *JP* Japan, *US* United States, *XM* euro area. *Source*: World Bank, Global Findex Database; Demirguc-Kunt et al. (2015)

notable advances in account ownership, particularly in India, Indonesia, and Malaysia, partly reflecting supply side initiatives from the governments and/or central banks.

An analysis of the determinants of the observed levels of financial inclusion is beyond the scope of this chapter. However, we note that the variation between the three different groups of economies is consistent with Demirguc-Kunt and Klapper (2012) who show that income levels correlate closely with the degree of financial inclusion across economies. Indeed, in the first group of economies (India, Indonesia, Philippines), GDP per capita in 2014 averaged US$ 2675 measured at current prices, while it amounted to US$ 7946 in the second group (China, Malaysia, Thailand), and US$ 41,430 in the third (Hong Kong SAR, Korea, Singapore).[10]

The numbers shown above do not include mobile money accounts, which are an increasingly important means of conducting financial transactions for many emerging economy households. While some mobile money accounts are not directly connected to an account at a formal financial institution, they provide financial transaction services similar to traditional bank accounts. In the emerging Asian economies considered here, mobile money is particularly important in the Philippines, where 15 % of adults in the 2011 survey reported using a mobile phone in the past year to pay bills, or to receive or send money. In the 2014 survey, close to 36 % of Korean account holders reported that they had made transactions from their account using a mobile phone, while 19 % had done so in China. The increased use of mobile money has important implications for regulatory authorities, as discussed by Caruana (2014) and Sriram et al. (2012).

Figure 5.2 provides another perspective to financial inclusion, documenting the share of adults who reported saving at a formal financial institution in the previous year. As financial access facilitates the inter-temporal smoothing of consumption, the savings dimension is very important. Dividing the economies into three groups in terms of savings behaviour in 2014 results in a similar composition as when account ownership is used. In India, Indonesia, and the Philippines, between 14 % and 27 % of the population saved money at a formal financial institution in the past year. In

[10] Simple averages across economies, based on data from IMF WEO.

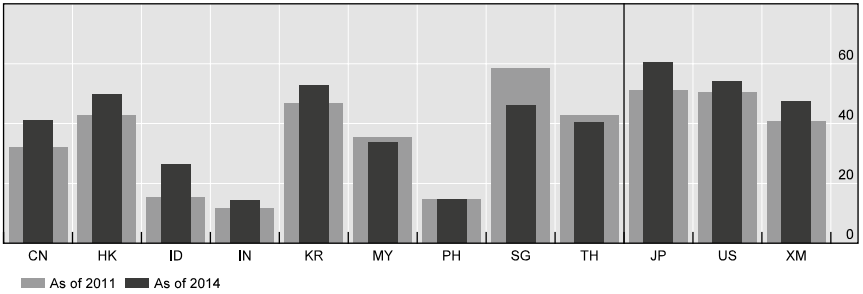

Fig. 4.2 Financial inclusion indicators: savings at formal financial institution. Share of adults who saved at a formal financial institution in the past year, in %. *CN* China, *HK* Hong Kong SAR, *ID* Indonesia, *IN* India, *KR* Korea, *MY* Malaysia, *PH* the Philippines, *SG* Singapore, *TH* Thailand, *JP* Japan, *US* United States, *XM* euro area. *Source*: World Bank, Global Findex Database; Demirguc-Kunt et al. (2015)

China, Malaysia, and Thailand, between 34 % and 41 % did so. The share in Hong Kong SAR, Korea, and Singapore, at around 50 %, was similar to the Euro area and the United States. In the sample of Asian emerging market economies, the share of savers at a formal financial institution increased the most in China and Indonesia during the past three years. In some economies such as Singapore, the share fell instead.

As shown by Figs. 4.1 and 4.2, formal account ownership does not necessarily imply its use for savings purposes, possibly stemming from high costs of using accounts, or the lack of trust among poor in formal financial institutions. There are, of course, alternative methods of saving. In 2014, 25 % of adults in Indonesia reported using community-based methods for saving in the past year, such as informal savings clubs or a person outside the family—an increase of 11 percentage points from 2011. But there is also a large group of consumers who report that they did not save by any means, including by placing cash under a mattress, in the past year. The share of such adults was 62 % in India in 2014.

Figure 4.3 provides a third proxy for financial inclusion, indicating the share of people who report having borrowed money from a formal financial institution in the past year. In this case, the share was lowest in 2014 for China, Hong Kong SAR, and India (all below 10 %), followed by Indonesia and the Philippines. Since 2011, the shares had fallen in both India and Thailand. But importantly, the numbers do not include outstanding loans, such as mortgages, or the use of credit cards as a source of short-term borrowing. The share of adults with outstanding mortgages in our sample was highest in 2014 in Singapore, over 31 %, followed by Korea and Malaysia, between 18 % and 19 %. In contrast, the proportion of the population with mortgages was less than 6 % in India, Indonesia, and the Philippines. The share of adults with a credit card ranged from 1.1 % in Indonesia to 64 % in Hong Kong SAR. Between 2011 and 2014, credit card ownership increased by around 8 percentage points in both China and Malaysia, to 16 % and 20 % respectively.

Caution is warranted when drawing conclusions regarding both the level and changes in the degree of financial inclusion. In the case of India, for example, bank accounts were a requirement for all participants

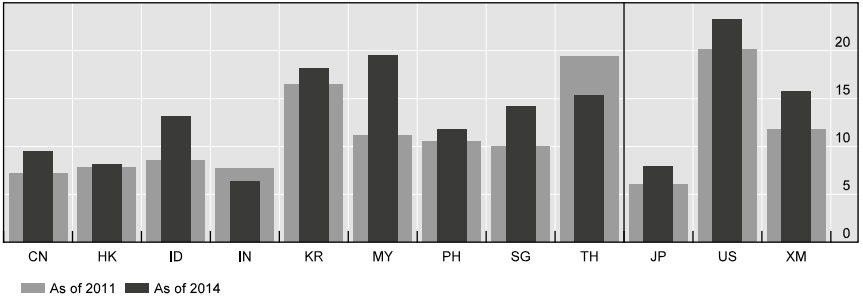

Fig. 4.3 Financial inclusion indicators: loans from formal financial institution. Share of adults who borrowed from a formal financial institution in the past year, in %. *CN* = China; *HK* = Hong Kong SAR; *ID* = Indonesia; *IN* = India; *KR* = Korea; *MY* = Malaysia; *PH* = the Philippines; *SG* = Singapore; *TH* = Thailand; *JP* = Japan; *US* = United States; *XM* = euro area. *Source*: World Bank, Global Findex Database; Demirguc-Kunt et al. (2015)

in the national rural employment guarantee scheme introduced in 2005 which then increased the number of accounts (Deininger and Liu 2013). To be sure, account ownership helps ensure that government transfers accrue to those intended, and may lead households to adopt other financial products as well. But mere account ownership may not contribute to consumption smoothing, or affect monetary policy transmission if the accounts are not used for saving or borrowing. Another reason figures on account ownership may exaggerate the degree of financial inclusion is that some accounts may be dormant (Subbarao 2012). Finally, the share of borrowers in any given period may reflect cyclical factors instead of improved financial access, which may help to explain some of the reductions in measures of inclusion for some countries displayed in Figs. 4.1, 4.2, and 4.3.

Financial Inclusion and Monetary Policy: Some Theoretical Arguments

Theoretical work on financial inclusion and monetary policy is related to research on limited asset market participation. Various implications have been considered in the literature. These include, inter alia, modelling the behaviour of agents who are neither able to save nor borrow; the stability conditions of monetary policy rules in an environment of limited financial access; the effectiveness of monetary policy when some agents are excluded from the formal financial system; and the implications for optimal policy outcomes in terms of output and inflation.

Many authors model financial exclusion by incorporating rule-of-thumb consumers into the theoretical framework. These consumers do not save or borrow. Instead, they consume all of their disposable income every period, which implies that their demand is determined by current real wages. As interest rates do not affect their inter-temporal consumption decisions, the transmission mechanism of monetary policy is affected by the degree of financial inclusion in the economy.

Using a framework that has provided the basis for many subsequent papers, Galí et al. (2004) introduce rule-of-thumb consumers in an otherwise standard sticky price model. They show that the presence of

such consumers, together with their interaction with countercyclical mark-ups, changes the range of parameter values for which a Taylor-type interest rate rule guarantees stability in the economy. As the share of rule-of-thumb consumers increases, the nominal interest rate must increase by more, for a given change in the inflation rate, in order for equilibrium to be determined. Therefore, increasing the nominal interest rate by more than the inflation rate—the so-called Taylor principle—will not necessarily guarantee stability when some consumers are rule-of-thumb. Galí et al. (2004) also show that when the monetary policy reaction function is forward looking, a large share of rule-of-thumb consumers may result in no equilibrium at all, or stability may require that nominal interest rates increase by less than the rise in inflation.

Drawing on the approach by Galí et al. (2004), Di Bartolomeo and Rossi (2007) argue that monetary policy effectiveness could actually increase when a fraction of consumers are unable to smooth consumption. In their framework, an increase in interest rates reduces the consumption of the financially included consumers. This induces a fall in real wages and consumption demand of the financially excluded households as well. As this "Keynesian" effect dominates the impact of inter-temporal substitution on consumption, monetary policy effectiveness increases as the share of credit constrained consumers' rises in the model.

In the model by Bilbiie (2008), a stable equilibrium generally requires that monetary policy is passive—nominal interest rates rise by less than inflation—when there is a large share of agents who are not able to smooth consumption. The author calls this the "inverted Taylor principle". In related work, Bilbiie and Straub (2013) argue that the monetary policy of the US Federal Reserve prior to the 1980s was consistent with equilibrium determinacy and macroeconomic stabilisation, even if monetary policy was passive. In Bilbiie and Straub (2012), the authors show how changes in asset market participation can lead to a change in the sign of the interest rate coefficient in the output Euler equation when asset market participation increases.

In contrast to some of the work mentioned above, Ascari et al. (2011) and Colciago (2011) argue that limited asset market participation may not fundamentally change the nature of optimal monetary policy. They show that if nominal wages are assumed to be sticky, the Taylor principle

is restored as a determinant of determinacy, even if the share of financially constrained consumers is large. On the other hand, Motta and Tirelli (2010) find that the introduction of consumption habits in the framework with financially excluded consumers will restore Bilbiie's inverted Taylor principle. These findings suggest that it is the interaction of various frictions that determine the conditions required for a stable equilibrium.

Moving on to policy outcomes in terms of output and inflation, Mehrotra and Yetman (2014) focus on the interaction between financial inclusion and the volatilities of the key target variables of the central bank. They show that, as the share of financially included consumers increases, the ratio of output volatility to inflation volatility will rise if the central bank is conducting policy to maximise the weighted welfare of the financially included and excluded consumers. The financially excluded population benefits more in relative terms from output than inflation stabilisation, as they are unable to smooth consumption over time. The authors use data for a large cross-section of economies to confirm the model's predictions.

In the models mentioned above, the assumption of rule-of-thumb consumers implies that there are extreme borrowing constraints affecting the financially excluded. Nevertheless, previous literature has suggested various ways through which consumption smoothing can occur in practice even without access to formal financial institutions. The financially excluded households can trade assets such as land or jewellery. Rosenzweig and Wolpin (1993) show how consumption smoothing has occurred through trading livestock in India. Also, farmers can adjust how much they work in response to shocks (Jayachandran 2006). Loans could be obtained from family, friends, or informal lenders. Allen et al. (2008) document the large extent to which Chinese entrepreneurs use loans from friends and "private credit agencies", especially in the growth phase of enterprises, despite the typically high interest rates charged by private lenders. Thus, the financially excluded may be able to smooth consumption through informal means, but the extent to which interest rate setting by the central bank directly affects their inter-temporal choices may still be limited, unless the interest rates in the informal sector are benchmarked to the formal sector.

Empirical Evidence on Interest Rate Sensitivity

We next move to examining the link between the effectiveness of interest rates as a policy tool and financial inclusion. Our first approach for evaluating the interest rate sensitivity of output consists of estimating Euler equations for Asian economies with different levels of financial inclusion. Inter-temporal substitution through interest rates is likely to be stronger the larger the share of consumers who have access to formal financial institutions, other things being equal. At the same time, we cannot rule out indirect effects of interest rate changes that could be operative even with the presence of many excluded consumers. Our approach is similar in spirit to Bilbiie and Straub (2012) who examine the stability of output Euler equations in the United States between the late 1970s and early 1980s, and attribute a detected structural break to changes in asset market participation over time. However, in contrast to that study, our focus is on the differences between economies at the same point in time.

The Euler equations are based on hybrid models, similar to those considered by Fuhrer and Rudebusch (2004), of the following form:

$$y_t = a_0 + a_1 y_{t-1} + a_2 y_{t-2} + \mu E_t y_{t+1} + \beta E_{t-1}\left[\frac{1}{\kappa}\sum_{j=0}^{\kappa-1}\left(i_{t+j} - \pi_{t+j+1}\right)\right] + \eta_t \tag{4.1}$$

Here, output reflects optimising consumption choices. The inclusion of past output in Eq. (4.1) is consistent with habit formation, where a household's utility depends partly on current consumption relative to past consumption (Fuhrer 2000). y_t denotes the output gap, and $E_t y_{t+1}$ Tis the expectation of period $t+1$ output formed at time *t.* i_t is the nominal interest rate, and $E_{t-1}\pi_{t+j+1}$ captures expectations of future inflation. It is straightforward to incorporate longer-term interest rates by adjusting the value of *k*. We use as benchmark analysis the case where $k=1$, but also consider longer-term interest rates where $k=4$.

We also estimate a simple forward-looking model that does not feature persistence in output. Setting $a_1 = a_2 = 0, k = 1$, it can be written as:

$$y_t = a_0 + \mu E_t y_{t+1} + \beta\left(i_t - E_t \pi_{t+1}\right) + \eta_t \tag{4.2}$$

This is theoretically closer to the Investment-Savings (IS) curve of micro-founded models, although its empirical fit could be worse than that of a hybrid model, given the observed persistent behaviour of output over time.

Our sample comprises nine economies in emerging Asia. The estimation period runs from 2000Q1 to 2013Q2, with minor differences between economies due to data availability. In order to compare the interest rate sensitivity of output in economies with different levels of financial inclusion, we divide the sample into two separate groups, using the World Bank's indicator of account ownership in 2011.[11] The first group comprises Hong Kong SAR, Korea, Singapore, and Thailand. The degree of account ownership varied between 73 % and 98 % of the population. In the second group that includes China, India, Indonesia, Malaysia, and the Philippines, the degree of account ownership was between 20 % and 66 % of the population in 2011.

We estimate the output Euler equation for each economy individually by generalised method of moments (GMM), and then examine the mean and median coefficients on the real interest rate for the two groups.[12] As instruments, we use lags 1–4 of the "endogenous" variables: the output gap, inflation, and nominal interest rates. The output gap is based on data for real GDP, with the cycle extracted by means of a Hodrick-Prescott (HP) filter, and a conventional smoothing parameter of 1600.[13] We consider different model specifications, including models with overnight and policy interest rates; hybrid and forward-looking specifications; and both short and longer-term interest rates, setting $k = 1$ and $k = 4$, respectively.

The results reported in Table 4.1 suggest that the interest rate sensitivity of output tends to be marginally higher in economies with a greater

[11] We use 2011 instead of 2014 as the former is more relevant for the estimation sample.

[12] We acknowledge that there are other factors beyond financial inclusion that may affect the interest rate sensitivity of output, including financial depth and financial development more broadly.

[13] We recognise the limitations of the Hodrick-Prescott filter in estimating the output gap precisely, including the presence of end-point bias. But, since our focus is on estimating the interest rate sensitivity of output, we proceed with the HP filter as a simple and widely used methodology for estimating the output gap.

degree of financial inclusion. As an example, when policy interest rates are used and a forward-looking specification (Eq. 4.2) is estimated, the mean of the real interest rate estimates amounts to –0.168 in economies with a higher degree of financial inclusion, and –0.145 in the group featuring less financial access. Using medians instead, the difference between the coefficients becomes somewhat larger in magnitude (–0.123 vs. –0.057). The message that the real interest rate sensitivity is higher in economies with greater financial inclusion generally holds across the different models. The only exception is the mean coefficient in the forward-looking model with overnight interest rates although, even then, not when medians are used in place of means. The J test for overidentifying restrictions (not reported) does not reject the restrictions for any of the models reported in the table.

The statistical significance of the estimated real interest rate coefficient is generally weak, confirming the findings of Fuhrer and Rudebusch (2004). Only for Singapore and Thailand in the group of higher financial inclusion, and for the Philippines in the group of lower inclusion, are the negative estimated coefficients significantly different from zero

Table 4.1 Coefficient on real interest rate in optimising Euler equation

	Using policy rates			Using overnight rates		
	Forward-looking	Hybrid		Forward-looking	Hybrid	
	Short rate	Short rate	Long rate	Short rate	Short rate	Long rate
Mean, higher inclusion	–0.168	–0.080	–0.042	–0.130	–0.068	–0.046
Mean, lower inclusion	–0.145	0.052	–0.015	–0.160	0.028	–0.030
Median, higher inclusion	–0.123	–0.023	–0.046	–0.106	–0.038	–0.035
Median, lower inclusion	–0.057	0.002	–0.014	–0.065	–0.006	–0.023

Source: Authors' calculations

Note: The group of economies with higher levels of financial inclusion includes Hong Kong SAR, Korea, Singapore, and Thailand; the group with lower levels includes China, India, Indonesia, Malaysia, and the Philippines. The forward-looking models are based on Eq. (4.2), and the hybrid models are based on Eq. (4.1)

in at least three of the models, at the 10 % level. This suggests caution when interpreting differences between the coefficient estimates reported in Table 4.1.

Another approach to evaluating interest rate sensitivity in the different economies consists of examining the impact of changes in nominal interest rates on output and prices. There is an extensive literature analysing the impact of interest rate shocks in vector autoregressive models (VARs), estimated for individual economies. Such models are increasingly used with panel data as well, thus incorporating both cross-sectional and time series dimensions (Canova and Ciccarelli 2013).

We estimate panel VAR models using the methodology proposed by Love and Zicchino (2006). Focusing again on two groups of economies, as in the Euler equations, we estimate trivariate VAR models with the vector of endogenous variables set as $[y, \pi, i]$.[14] The variables are defined identically to the Euler equations above, although only overnight rates are considered here. To account for cross-sectional heterogeneity, we include fixed effects by forward-mean differencing, the Helmert procedure (Arellano and Bover 1995). Two lags of endogenous variables are included in the estimation.

After estimating the reduced form models, shocks are identified by the conventional Cholesky decomposition of the variance-covariance matrix. The ordering of the variables is in line with the vast empirical work on the identification of monetary policy shocks, where interest rate shocks are assumed to affect output and prices only with a lag. This assumption can be justified on a theoretical basis, including the predetermination of expenditures and rigidities in price setting (Woodford 2003). The focus of our analysis is on the impact on output gap and inflation of a shock to the nominal interest rate in the two groups of economies.

The second column of Table 4.2 shows the magnitude of a one standard deviation shock to the interest rate in the two groups of economies. It is immediately clear that short-term interest rates are much more volatile in economies with a lower degree of financial inclusion. This

[14] Indonesia is excluded from the second group in the panel VAR estimation due to the counterintuitive result of a persistent positive impact from an interest rate shock to inflation.

Table 4.2 Impact of shocks to nominal interest rate

	One standard deviation shock to interest rate	Response to 1 percentage point shock in interest rate	
	Using overnight rates	Output gap	Inflation
Higher financial inclusion	0.32	0.42	1.22
Lower financial inclusion	0.69	0.26	0.42

Source: Authors' calculations

Note: The last two columns show the maximum impact during the next six quarters on output gap and prices, in % of a one percentage point shock to the nominal interest rate. Details on the estimated VARs are in the text

could reflect the larger size, and a more frequent occurrence of shocks in economies with lower income levels (Aguiar and Gopinath 2007). In similar vein, it is possible that a lack of financial inclusion itself works to magnify the effects of the shocks hitting the economy. The greater volatility of interest rates in economies with a lower degree of inclusion is in line with Mehrotra and Yetman (2014). The authors show theoretically that, when faced with productivity shocks, interest rates will decline by more in those economies with less inclusion, as they need to respond to a greater decline in inflation. In contrast, private sector agents in economies with greater inclusion respond to positive productivity shocks by a further increase in investment, limiting any fall in prices, and thus requiring a smaller change in interest rates.

The next two columns focus on the impact of interest rate shocks, in particular, the maximum point impact of a nominal interest rate shock of one percentage point on the output gap and inflation, during the six quarters following the occurrence of the shock. The estimates, *prima facie*, suggest that the impact of an interest rate shock on output and inflation is larger in economies with a higher degree of financial inclusion. In particular, in the model with two lags, the point impact on output is around 1.5 times as large, and the impact on inflation three times as big in these economies, compared to those with less financial access. However, as with the GMM estimates, there is a considerable amount of estimation uncertainty, in part because all the complex interactions in the data are not explicitly modelled in our small scale VAR. In particular,

using 90 % confidence intervals, statistically significant impacts are only observed for the group with a lower level of financial inclusion, and then only when the impact on output is considered.[15]

What explains the relatively small differences in the interest rate sensitivity of output that are observed in the estimates of the Euler equations? One possibility is that our estimates are also capturing indirect effects of changes in interest rates on output. While financially excluded consumers are not directly affected by a change in policy interest rates, they may be affected by the change in demand by the financially included households, possibly through changes in real wages (Di Bartolomeo and Rossi 2007). If the financially excluded households adjust their demand in a similar way to the financially included, we should see a change in output across the economy, which is then reflected in the estimates, even if not explicitly controlled for.

Another possible explanation for the small observed differences is that changes in policy rates may affect informal lending rates in the economy. Thus, households formally classified as "excluded" but relying on such sources of borrowing will be affected. Qin et al. (2013) provide evidence that informal lending rates in the city of Wenzhou have been sensitive to monetary policy measures by the People's Bank of China, consistent with this argument.

Finally, as an important caveat, to the extent that emerging economies use multiple instruments in setting their monetary policy, our results regarding the interest rate sensitivity of output and inflation only capture one of the many instruments used by the monetary authorities (Filardo et al. 2014).

[15] If a VAR with 1 lag is estimated instead, the impact on inflation is again larger for the economies with greater financial inclusion, while the impact on output is similar for both groups. In this case, the impact on inflation of an interest rate shock appears statistically significant for some quarters for economies with a higher degree of financial inclusion, albeit again with very large confidence intervals.

Financial Inclusion and Monetary Policy Targets

The empirical analysis in the previous section suggests that interest rate sensitivity may be somewhat lower for economies where a large segment of the population remains outside the ambit of the formal financial sector. As postulated in literature, one of the reasons for this divergence could be the role of interest rates in consumption. The demand of credit-constrained consumers essentially depends on their current disposable income. In emerging and developing economies, a large proportion of these consumers are likely to be in the agricultural sector, with their disposable income principally in the form of current wage income and real wages dependent on flexible goods prices, in particular food prices. This could also have implications for the central bank's choice of inflation target for conduct of monetary policy.

Conventional models of the New Keynesian type suggest that monetary policy should target core inflation and aim at achieving price stability in the fixed price sector, which is characterised by menu costs and sticky price adjustments (Aoki 2001). However, recent theoretical work by Anand et al. (2015) suggests that, when there is a significant share of population without access to the financial system and the share of food in total consumption expenditure is high, monetary policy that targets headline instead of core inflation may increase welfare.[16] When food prices increase, aggregate demand by credit-constrained consumers in the agricultural sector increases, further increasing inflation pressures. This gives a role for headline inflation targeting—using as a target an index where food price are included. Monetary policy needs to react to the increase in aggregate demand by the credit-constrained households, including limiting the initial food price increase.

Anand et al. (2015) argue that the conditions outlined in their model are particularly likely to prevail in developing economies. Considering a sample comprised of seven Asian emerging markets and three advanced economies, it does appear that a lower level of financial inclusion is

[16] See also Prasad (2014).

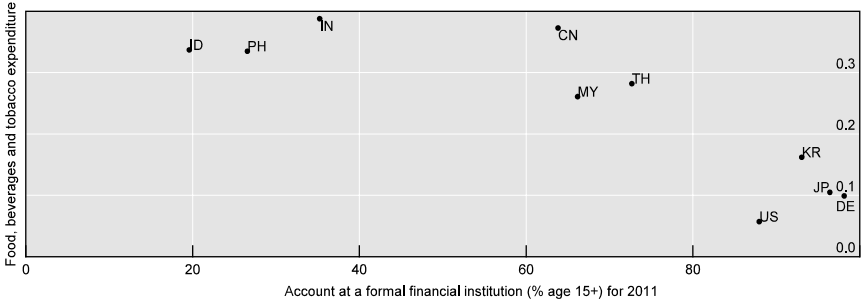

Fig. 4.4 Share of additional income spent on food. Distribution of additional $1 of income across broad expenditure categories, as of 2005. Shown is the share of the category "Food, beverages and tobacco". *Source*: International Food Consumption Patterns database, United States Department of Agriculture; World Bank, Global Findex Database; Demirguc-Kunt and Klapper (2012)

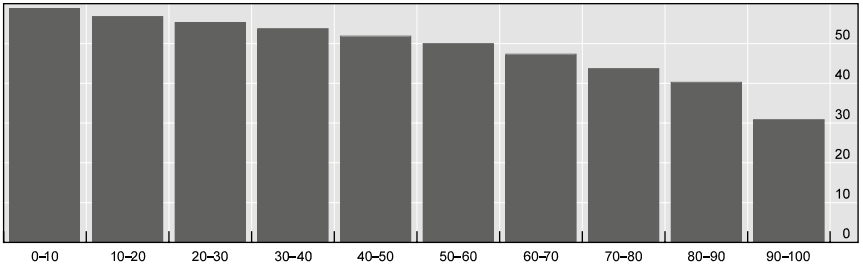

Fig. 4.5 Share of food in total expenditure, India. In % by decile class of expenditure.
Source: Authors' calculations based on unit level data from the National Sample Survey Organisation Survey on Employment and Unemployment, 2011–2012

associated with a higher share of food in overall expenditure. Figure 4.4 depicts the share of additional US$1 of income that is spent on food, together with the share of population that had an account at a formal financial institution in 2011. The relationship within our sample appears to be highly nonlinear. Similar marginal income elasticities are recorded for very different levels of account ownership, when the latter is below 80 % of the population. In contrast, the marginal income elasticity drops sharply for advanced economies with high levels of account ownership.

Similar differences in food consumption patterns are prevalent also *within* individual economies. Engel's law suggests that as income increases, the proportion of income spent on food falls. Figure 4.5 compares the share of food in total expenditure among different expenditure deciles in India. Whereas in the lowest decile class of expenditure about 60 % of expenditure is allocated on food, the share drops monotonically, to about 30 % for the richest decile.

Another important reason for focusing on headline inflation instead of core inflation stems from the second round effects of food price shocks in emerging economies (Walsh 2011). When a large share of the population is credit-constrained, a sudden increase in food prices could lead to a spike in consumption volatility. For households to maintain previous consumption levels, without access to borrowing, wages may have to rise significantly. This increases the potential for second round effects on inflation, including for agricultural goods prices. Indeed, Jacoby (2013) finds that farm wages in India are highly elastic to changes in the relative price of food, and there are significant spillover effects to non-agricultural wages as well. The data from the World Bank confirms that rural households have more limited financial access than their urban counterparts, with the share of account ownership 16 percentage points lower in rural than in urban areas globally in 2011.[17]

The potential for food price increases to create second-round effects is particularly clear when the costs of living of different segments of the population are considered. Using data for India, we estimate the hypothetical inflation rate faced by the different segments of population in the face of food price shocks, other things remaining constant. If there is a 20 %

[17] See also Basu and Srivastava (2005) for the Indian case.

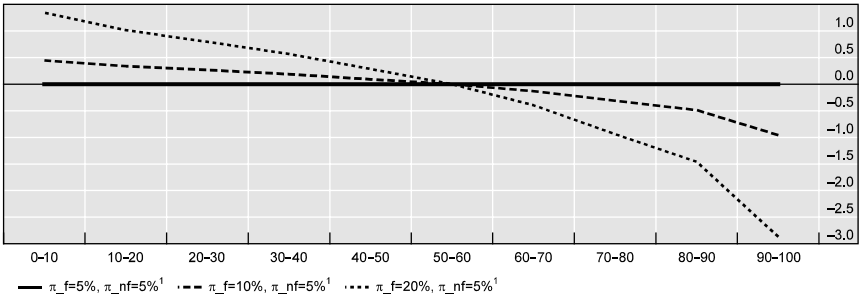

Fig. 4.6 Asymmetric impact of food price driven inflation. Deviation from average inflation, in percentage points; by decile class of expenditure. [1]*n* and *nf* denote food and non-food components of inflation, respectively. *Sources*: National data; authors' calculations

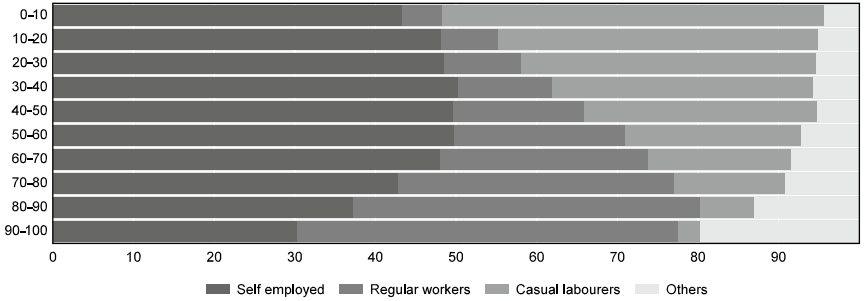

Fig. 4.7 Employment profile of households in India. Shares as % of total; by decile class of expenditure. *Source*: Authors' calculations based on unit level data from the National Sample Survey Organisation Survey on Employment and Unemployment, 2011–2012

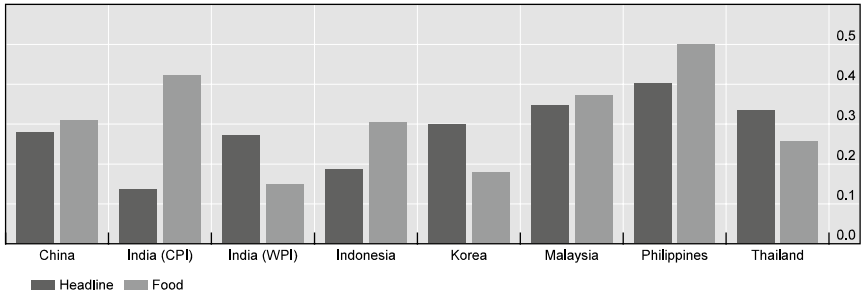

Fig. 4.8 Persistence of inflation. Persistence is computed as the coefficient on the lagged term of an AR(1) process of inflation. Inflation is the first difference of the (log) price index.
Sources: CEIC; authors' calculations

increase in food prices but non-food prices go up only by 5 %, the lowest expenditure decile would face a hypothetical inflation rate that is about 1.5 percentage points higher than the average hypothetical rate (Fig. 4.6).

In India, as in many other emerging markets, most employees in the lower expenditure class work either as casual labourers or as self-employed (Fig. 4.7). Given that the access to the formal financial system for this group is limited, the demand for wage increases in the casual labour market to maintain past levels of consumption could be strong. And, given that about half of the labour force in India works in the agricultural sector, wage pressures in that sector could be particularly large, potentially leading to persistence in food price inflation.

In line with such interactions, estimates indicate that food price inflation is as persistent as headline inflation in some emerging Asian economies (Fig. 4.8). Modelling inflation as a simple autoregressive process, and using the lagged coefficient as a measure of persistence, food price inflation appears to be more persistent than headline inflation in China, Indonesia, Malaysia, and the Philippines. A similar result is obtained for India when consumer price index (CPI) inflation is used. In the cases of Korea and Thailand—the former with a lower marginal income elasticity of food than the other six emerging economies in our sample (Fig. 4.4)—the persistence of food price inflation is lower than that of headline inflation.

With these considerations in mind, we next provide empirical evidence related to the price indices that serve as targets of monetary policy in emerging Asia. Regarding the stated targets, four economies out of the seven in the sample had explicit inflation targeting regimes during our study period. Indonesia and the Philippines specified their targets in terms of consumer price inflation during the sample. Korea targeted core inflation during 2000–2006, and from 2007 onwards it has specified its inflation targets in terms of CPI inflation. Thailand targeted core inflation until end-2014, and switched to headline inflation targeting from the beginning of 2015 onwards. China and Malaysia do not explicitly target inflation. However, there is evidence that broader inflation measures than core inflation are important gauges of price pressures for the central banks in these economies. For example, in the case of China, the Government's Central Economic Work Conference

sets an annual goal for CPI inflation. Moreover, the People's Bank of China emphasises the importance of food prices for inflation pressures, suggesting that persistently high food prices will "shove up the cost of living, feed inflationary expectations, and may cause cost-pushing inflation" (People's Bank of China 2007, p. 78). For Malaysia, headline inflation is measured by the consumer price index, thus including food prices.

During the sample period, the Reserve Bank of India was operating under a multiple indicator approach wherein price stability was one of the key objectives. However, it moved to flexible inflation targeting with the signing of the Agreement on Monetary Policy Framework with the government in February 2015. The inflation target is defined in terms of the consumer price index.

Another approach to analyse policy targets is to empirically examine how strongly the prevailing monetary policy stance has been adjusted in relation to movements in the different price indices. Here, we evaluate the correlation coefficients of real policy interest rates with deviations of inflation from target,[18] to unveil potentially differing responses to changes in headline (consumer price) and core inflation. A larger positive coefficient would imply that real rates have adjusted by more—either through changes in nominal interest rates or changes in expected inflation—to movements in the measure of inflation. At the same time, we acknowledge that the unconditional correlations may reflect the mix of demand and supply shocks hitting the economy, in addition to the specific measure of inflation that the central bank responds to.

Our sample runs from 2000Q1 to 2013Q2 for most economies.[19] Two different interest rates are considered: the central bank's policy rate and an overnight rate (money market/interbank lending rate, or a comparable measure).

Table 4.3 shows that, in all economies, the real ex ante interest rates are positively correlated with both headline and core inflation. When inflation increases relative to target (or inflation increases relative to past aver-

[18] In the case of core inflation, the target is specified as the 20 quarter moving average of core inflation.

[19] The sample starts in 2002Q1 for the Philippines due to the adoption of inflation targeting in 2002. Other minor differences in samples result from data availability for the different economies.

Table 4.3 Correlation of real interest rate with inflation gap

	Using policy rates		Using overnight rates	
	CPI inflation gap	Core inflation gap	CPI inflation gap	Core inflation gap
China	0.11	0.01	0.27	0.28
India	0.27	0.40	0.35	0.44
Indonesia	0.45	0.38	0.39	0.29
Korea	0.29	0.09	0.33	0.14
Malaysia	0.30	0.24	0.30	0.26
Philippines	0.06	0.06	0.05	0.06
Thailand	0.25	0.57	0.19	0.54

Source: Authors' calculations

Note: The table shows the correlation coefficient between the real *ex ante* interest rate, defined as the nominal interest less inflation four quarters ahead, and a measure of inflation gap. The core inflation target is computed as the 20 quarter moving average of core inflation. For those economies that do not have an explicit inflation target, CPI inflation targets are computed as the 20 quarter moving average of CPI inflation

age inflation), real interest rates tend to increase as well. The correlation coefficients are higher in some cases when CPI inflation is considered, suggesting that real rates respond more strongly to headline than core inflation, but the differences are small. Higher correlation coefficients for overall consumer price than core inflation are observed in Korea, and to a smaller extent in Malaysia and Indonesia as well. In the case of Thailand, real rate movements appear to be more strongly associated with core inflation, which is in line with their stated monetary policy framework during the sample period.

In India, correlation coefficients are higher when core inflation is used, which may seem surprising. But it could arise from the "multiple indicator approach" of the Reserve Bank of India, especially prior to the recent emphasis of the central bank on consumer prices. In the multiple indicator approach, different indicators, including prices, were monitored by the Reserve Bank in order to provide inference regarding the appropriate policy stance. Moreover, the focus was more on inflation based on wholesale price index in the absence of a nationwide representative CPI measure.

In sum, the official frameworks (for the inflation targeters) and policy communication (for the others) indeed appear to provide support for the

importance of headline inflation in the policy frameworks. This is in line with what Anand et al. (2015) suggests to be welfare enhancing in economies with limited financial inclusion and a considerable share of food in the consumption basket, based on their theoretical model. Our empirical exercise, however, generally confirms that real rates are positively correlated with both headline and core inflation with only limited differences observed between the price indices.[20]

Conclusion

Limited access to financial services has implications for economic growth and inequality, but it also matters for the conduct of monetary policy. In this chapter, we have analysed the links between financial inclusion and monetary policy, focusing on the interest rate sensitivity of output and prices, and the targets of monetary policy, in emerging Asian economies with different degrees of financial inclusion.

Estimating output Euler equations, we obtain some evidence that the interest rate sensitivity of output is stronger in economies with a higher degree of financial inclusion. Panel VAR estimates deliver similar results for both output and prices. However, the differences that arise between economies with various degrees of financial access, in particular when estimating Euler equations, are not sizeable. This could arise due to indirect effects of interest rate changes on aggregate demand that also affect the financially excluded population, possibly working through the demand response of the financially included households.

Regarding the implications for the targeted price indices, emerging Asian central banks tend to emphasise headline, rather than core, price indices both in their formal monetary policy frameworks and communication. This is in line with the theoretical results of Anand et al. (2015) related to the targets of monetary policy in environments of limited financial inclusion and a high share of food in the consumption basket. However, the distinction between core and headline inflation targeting appears less strong

[20] Of course, there are various reasons beyond the interaction of financial exclusion with a large share of food in the consumption basket for why central banks may prefer to target headline inflation rather than core inflation. See for example Bullard (2011).

when we use actual data to evaluate the correlation of real interest rate movements with core and consumer price inflation, respectively.

Given central banks' and other policymakers' efforts to encourage greater financial inclusion, the interest rate channel of monetary policy could well increase in importance in many emerging and developing economies over time. However, several microeconomic and structural aspects—not discussed in this chapter—are important as well. These include the costs incurred by households when using formal financial services; the extent to which financial innovation can boost the supply of financial services available to previously excluded households and small and medium-size enterprises; and how strongly banks pass through changes in the monetary policy stance to the real economy. How much monetary transmission and consumption smoothing in the economy can be enhanced through greater financial inclusion is likely to depend, to an important extent, on such factors.

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Part III

Financial Inclusion in Asia: Country Experiences

5

Financial Inclusion in Indonesia: Moving Towards a Digital Payment System

Moekti Prasetiani Soejachmoen

Introduction[1]

The benefit of financial inclusion in economic development is widely recognised not only to help low-income people manage risk and absorb financial shocks, but also to establish a foundation for stable and inclusive economic growth by boosting job creation and increasing investment in education. The low-income class are underserved because they assume that because they have no money, they do not need and do not benefit from financial services. However, this belief is incorrect because in the long run economic growth will reach all segments of society, including the poor and vulnerable. Serving the poor and vulnerable is financially feasible, and this group comprises a significant part of the population.

[1] This chapter is part of the research paper series on Financial Inclusion prepared by Mandiri Institute team consist of Dr. Moekti P. Soejachmoen, Prof. Dr. Suahasil Nazara, Dr. Ardi Adji, Ira Setiati, Andjarsari Paramaditha and Andrian Bagus.

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Framed in this manner, products can be developed to meet the needs of these people. As their income grows, the low-income and poor population will enter the middle-income population, and they will need more sophisticated products. In Indonesia, like other developing countries, financial inclusion is critical in lifting up the poor and vulnerable, which account for roughly 40 % of the population, to a higher standard of living. Access to financial services in Indonesia is considered low compared to other Asian countries; the number of the Indonesian adult population with access to formal financial services is only 36.1 % in 2014, compared to 80.7 % in Malaysia, 78.1 % in Thailand, and the average in East Asia and Pacific at 69 %. The number of commercial bank branches in Indonesia is also low at roughly 9.8 % in 2014 compared to the Philippines with 18.3 % and Thailand with 12.9 % (World Bank 2014b).

Globally, between 2011 and 2014, the percentage of adults with formal accounts increased from 51 % to 62 % because of the increase of account ownership in developing countries and the role of technology. As reported by Global Findex, mobile money accounts in Sub-Saharan Africa are helping to rapidly expand and scale up access to financial services (World Bank 2014b).

The high cost of opening branches in remote areas and the high penetration of mobile phones even among the poor make the digital payment system and branchless banking the most appropriate strategy to be adopted in Indonesia to boost financial inclusion. The government together with the private sector collaborated to launch the digital payment system and non-cash disbursement of the Social Protection Programme in late 2014. Although many challenges remain to implementing this Programme, the branchless banking is a way forward for financial inclusion in Indonesia.

The remainder of the chapter is organized as follows: section 'Current State of Financial Inclusion in Indonesia' will begin with a discussion of the current state of financial inclusion in Indonesia, by examining the trends in different financial inclusion indicators widely used in the literature. The following section 'Models for Financial Inclusion' will describe in detail the various models of financial inclusion adopted by different countries. Section 'Indonesia: Moving Towards a Digital Payment System' will then specifically zoom in on the digital payment system and why it is the way forward for Indonesia to achieve greater financial inclusion. Section 'Conclusion' concludes the chapter.

Current State of Financial Inclusion in Indonesia

How to Measure Financial Inclusion?

There is no single indicator that one can use to denote how inclusive an economy's financial system is. Indeed, financial inclusion comprises a set of different issues impossible to be reflected in a single number. Nevertheless, it is very important to have a sort of agreement regarding indicators that may be used to assess the degree of financial inclusion in a country. There are several sets of indicators forwarded by different initiatives on how to assess how inclusive a financial system is. This section will elaborate on three sets of indicators that have been examined by differing institutions.

The first is from the International Monetary Fund (IMF), employing the framework of usage and access to financial services. Started in 2004, the IMF initiates a global data collection of the following indicators.

Access indicators:	– Number of commercial bank branches per 1000 km^2
	– Number of commercial bank branches per 100,000 adults
	– Number of ATMs per 1000 km^2
	– Number of ATMs per 100,000 adults
Usage indicators:	– Number of borrowers from commercial banks per 1000 adults
	– Outstanding loans from commercial banks (% of GDP)
	– Number of depositors with commercial banks per 1000 adults
	– Outstanding deposits with commercial banks (% of GDP)

The Financial Access Survey (FAS) provides internationally comparable basic indicators on financial access and usage. The database currently covers 189 countries for a nine-year period, 2004–2012.[2] The data is used for the G-20 Basic Set of Financial Inclusion Indicators endorsed by the G-20 Leaders at the Los Cabos Summit in June 2012.

[2] http://fas.imf.org.

Another initiative is by the Alliance for Financial Inclusion (AFI), which is a global network of financial policymakers from developing and emerging countries with an aim to increase financial services for the poor. AFI members currently are central banks, including Bank Indonesia, and other financial regulatory institutions in more than 90 countries. There are several working groups established under this initiative, one of them is the Financial Inclusion Data Working Group (FIDWG) focusing on the measurement of financial inclusion. The Working Group has identified a core set of financial inclusion indicators, covering access and usage.

Access indicators:	– Number of access points per 10,000 adults at a national level and segmented by type and by relevant administrative units – Percentage of administrative units with at least one access point[3] – Percentage of total population living in administrative units with at least one access point
Usage indicators:	– Percentage of adults with at least one type of regulated deposit account (or, the number of deposit accounts per 10,000 adults) – Percentage of adults with at least one type of regulated credit account (or, the number of loan accounts per 10,000 adults)

All of the above indicators, concentrating on its international comparability, provide a quick and bird's eye view on a nation's financial inclusion. The IMF-FAS indicators are more bank-oriented, while the core set of indicators from the AFI-FIDWG cover a broader spectrum of financial services, including those provided by non-bank entities. The core set, however, is still in its infancy as the initiative relies on each of its member states to calculate and share those indicators for international comparability.

A more thorough set of indicators has been proposed, under the auspices of the World Bank. The initiative also involves the establishment of a database called the Global Financial Inclusion or Global Findex.[4] The first analysis of the 2011 Global Findex data can be found in

[3] 'Access points' are defined as regulated access points where cash-in (including deposits) and cash-out transactions can be performed. More about this can be seen in http://www.afi-global.org/sites/default/files/publications/afiper cent20fidwg per cent20report.pdf.

[4] http://go.worldbank.org/TN8C86K630.

Demirguc-Kunt and Klapper (2012), covering roughly 148 economies, on different aspects of savings, borrowing, making payments, and managing risks. For Indonesia, the survey was conducted in May 2011, covering about a thousand respondents, with a margin of error around +3.8 %. Under the Global Findex core indicators, there are five areas of financial services that are of importance and their indicators are as follows.

Access indicators:	– Per cent of adults with an account at a formal institution – Purpose of accounts (personal or business) – Frequency of transactions (deposits and withdrawals) – Mode of access (ATM, branch, etc.)
Savings:	– Per cent of adults who saved within the past 12 months using a formal financial institution – Per cent of adults who saved within the past 12 months using an informal savings club or person outside the family – Per cent of adults who otherwise saved (e.g., in their home) within the past 12 months
Borrowings:	– Per cent of adults who borrowed within the past 12 months from a formal financial institution – Per cent of adults who borrowed within the past 12 months from informal sources (including family and friends) – Per cent of adults with an outstanding loan to purchase a home or an apartment
Payments:	– Per cent of adults who used a formal account to receive wages or government payments within the past 12 months – Per cent of adults who used a mobile phone to pay bills or send or receive money within the past 12 months – Per cent of adults who used a formal account to receive or send money to family members living elsewhere within the past 12 months
Insurance:	– Per cent of adults who personally purchased private health insurance – Per cent of adults who work in farming, forestry, or fishing, and personally paid for crop, rainfall, or livestock insurance

In addition to the three major financial inclusion measurements elaborated above, there are still other initiatives on financial inclusion indicators and databases. An example is the FinScope survey[5] sponsored by the FinMark Trust, a non-profit organisation aimed at making financial markets work for the poor.

[5] http://www.finmark.org.za/finscope/.

The objective of the FinScope survey is to measure and profile the levels of access to and uptake of financial products/services across income ranges and demographic groups. Conducted primarily among Southern African countries, the FinScope survey focuses on the demand-side of the financial services, with indicators posing typical similarities to the Global Findex indicators.

Indonesia's Exposure to Financial Services

From the macroeconomic point of view, long-term economic development brought Indonesia into lower middle-income country status in 2013 with incomes recorded at around US$ 3500 per capita. Indonesia remained strong during and following the 2008–2009 global economic crisis (Fig. 5.1). In 2009, economic growth was recorded at 4.6 %, and increased to 6 % annual growth from 2010 to 2012. In 2013, the growth declined to 5.6 %, and in 2014 the growth was only 5 % (BPS).

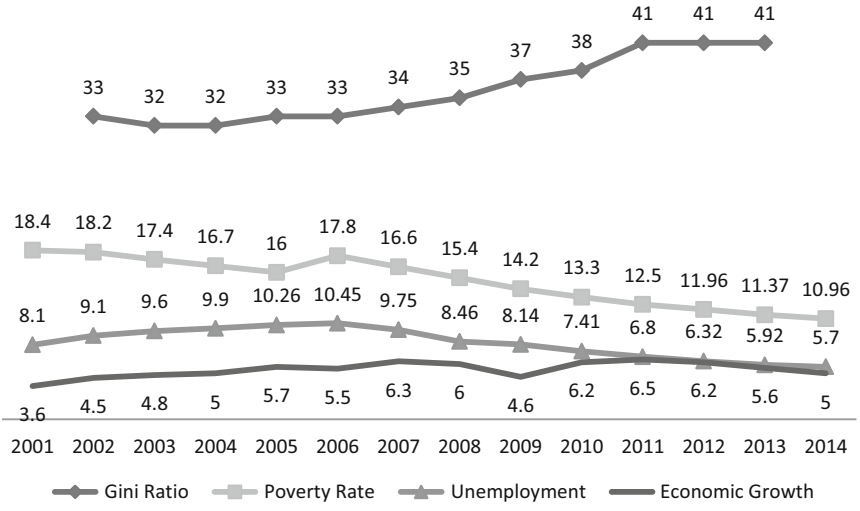

Fig. 5.1 Indonesian macroeconomic indicators, 2001–2014.
Source: World Bank, WDI website http://data.worldbank.org/indicator

The economic growth has also reduced the number of people living below the poverty line. In 2000, following the Asian financial crises, there were about 38.7 million people living below the poverty line, a poverty rate of 19.14 %. In March 2014, more than 10 million people were elevated out of poverty, leaving about 28.3 million people below the line or a poverty rate of 11.25 % (WDI website). Despite such a remarkable achievement in poverty alleviation, it is anticipated that further poverty reduction would be increasingly difficult for Indonesia. The declining trend in poverty has been evident in the last half decade, requiring the government to devise a more integrated poverty alleviation Programme combined with nationwide social protection and safety net Programmes.

As the economy continues to grow, the need for financial services is also expanding. The financial system needs to adjust, allowing more people to be part of it. An inclusive financial system, one that is able to reach out to the poor and vulnerable, becomes a new objective worldwide. In the international forum, since the Global Financial Crisis struck in 2008, financial inclusion has become one of the global targets. The 2009 G20 summit in Pittsburgh pledged financial inclusion as one of the pillars, and in 2013, more than 50 countries had committed to support and formulate national-level strategies of financial inclusion (World Bank 2013b; AFI 2011). In general, almost two-thirds of countries in the world acknowledged the importance of financial inclusion for their respective countries' economic and social development.

In development economics, efficient and well-functioning financial institutions are essential in mobilising savings and facilitating trade. The existence of financial institutions and markets opens up opportunities to all market participants to improve their allocation of resources to produce healthy investment returns. In turn, this will increase economic growth. Unfortunately, for most developing and underdeveloped countries, due to information asymmetry and high transaction costs, financial access is limited to large companies and/or well-connected individuals. Therefore, only some can have the financial support necessary for their individual and business developments. Development economics theory, i.e. Kuznet's Hypothesis postulated that in the early stages of development in a country, there will be unequal income distribution. This will need to be urgently corrected as abundant evidence shows uneven income distribution can create serious obstacles in strengthening economic growth.

Enhancing financial inclusion is part of the reform agenda in many countries seeking to improve income distribution and reduce poverty levels. When financial access is limited, households and small firms can only rely on their own resources to invest in education and business expansion. However, when more people have access to financial institutions and markets, they have more opportunities to progress. Empirical evidence showed that providing individuals with access to saving accounts increased savings (Aportela 1999; Ashraf et al. 2006), boosted consumption, and encouraged productive investments (Dupas and Robinson 2011, 2013). Besides increasing consumption and investment that will ultimately expand economic growth, financial inclusion also allows more people to obtain insurance products and credit. In general, when people have protection through purchasing insurance products, they will be able to take a calculated risk-taking action necessary for their entrepreneurial activities (Cole et al. 2013). Coupled with more access to credit and loans, individuals and small firms will be able to expand their business endeavours (Bruhn and Love 2014).

In addition to those direct benefits, enhancing financial inclusion has indirect benefits, notably to few countries with social policy schemes. Governments in several countries acknowledged that the implementation of their social policies became more efficient (mostly associated with lower cost) and effective (better targeting) by using the financial market. In Brazil, for instance, the Bolsa Familia[6] Programme was able to reduce its transaction costs from 14.7 to 2.6 % of its total costs when using electronic payment cards (Lindert et al. 2007).

In 2010, the World Bank published its research findings on financial inclusion in Indonesia. About half of population, 52 %, in Indonesia had financial access. As the financial market in Indonesia has been dominated by the banking sectors, it was not surprising that out of those with financial access, half of them used banking services to save. A much smaller percentage of people used other forms of formal financial services such as pawnshops, cooperatives, and so on. The rest of the population used informal/semiformal financial services to save, and 17 % of the total Indonesian population did not save at all, according to the World Bank

[6] Bolsa Familia Programme is a conditional cash transfer Programme that has 12 million household recipients (CGAP Focus Note, April 2014).

findings (World Bank 2010b). In the credit market, only 17 % of the population borrowed from banks while the rest, 43 %, who borrowed did so through the informal sector. The rest of the population, 40 %, did not borrow at the time of the survey in 2010 (World Bank 2010b).

The penetration of bank branches and ATMs is still very low in Indonesia. There were only on average 9.76 bank branches per 1000 km^2. In reality, these branches are concentrated in cities, rather than evenly spread over the vast area of Indonesia, this is also the situation for ATMs in Indonesia. Nevertheless, the ATM expansion grew at a faster rate than compared to commercial bank branches. This reflects the bank's strategy to getting services in closer proximity to users. An ATM may provide a vast array of services to clients at a lower cost compared to opening a branch office (Tables 5.1 and 5.2).

The compounded annual growth rate (CAGR) for the access indicator is higher than that for the usage indicator. Bank branches and ATMs, between 2004 and 2013, grew at a higher rate compared to the deposits and loans at commercial banks. It means that the use of banking services is lower than the availability of services.

Based on Global Findex 2014, in terms of utilisation of financial services, Indonesia's outstanding deposits and loans in commercial banks as a percentage of its GDP in 2013 was 40.33 % and 36.25 %, respectively. These numbers pale in comparison even with its Southeast Asian neighbours such as Malaysia with 119.47 % and 121.64 %, respectively, Thailand with 84.08 % and 82.13 %, respectively, and Vietnam with 118.1 % and 103.6 %, respectively. Only the Philippines' indicators were lower with 49.1 % and 24 %, respectively, than those of Indonesia.

Table 5.1 IMF-FAS access indicators, 2004–2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	CAGR (%)
Commercial bank branches										
Per 1000 km^2	4.62	5.1	5.42	6.07	7.15	7.71	8.23	9.24	9.76	9.8
Per 100,000 adults	5.32	5.8	6.07	6.71	7.79	8.27	8.69	9.59	10.40	7.4
ATMs										
Per 1000 km^2	8.16	9.36	10.41	12.1	13.22	12.39	15.91	35.15	39.79	21.9
Per 100,000 adults	9.41	10.64	11.66	13.37	14.4	13.29	16.79	36.47	42.40	20.7

Table 5.2 IMF-FAS usage indicators, 2005–2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	CAGR (%)
Deposits with commercial banks										
Outstanding deposits (% of GDP)	40.66	38.55	38.24	35.43	35.19	36.28	37.52	39.13	40.33	–0.10
Deposit accounts per 1000 adults	508.68	462.61	470.38	481.56	503.23	584.39	635.97	708.12	863.03	6.83
Loans with commercial banks										
Outstanding loans (% of GDP)	25.07	23.73	25.36	26.42	25.65	27.39	29.64	32.85	36.25	4.7
Loan accounts per 1000 adults	139.7	145.28	153.31	179.87	196.26	203.58	220.99	225.89	217.03	5.7

Source: Global Findex database

Similar indicators for Asia's developed countries such as Japan and Australia showed high numbers similar to Malaysia and Vietnam. Japan's outstanding deposits in commercial banks as percentage of its GDP was recorded at 141.06 %, while Australia's reached 72.29 %. In 2013, outstanding loans in commercial banks in Japan were 99.76 % of its GDP, and in Australia the number was 141.06 %.

At the same time, the most common indicators of financial access used in financial inclusion analyses are the number of commercial banks' branches and ATMs per 100,000 adults. Since it is usually rather costly to open banks' branches, the number of ATMs per 100,000 adults can demonstrate the level of financial access penetration in the society. In Indonesia 2012, the number of ATMs was 42.4 per 100,000 adults. Again, this number was low compared to Malaysia with 55.5 and Thailand with 104.32. In developed economies such as Japan, the number is even higher at 128.13, and in Australia with 163.88 ATMs per 100,000 adults (World Bank 2014b).

Immediately the question that arises is what are the reasons for the low usage. The World Bank report "Improving access to financial services in Indonesia" (2010b) distinguished three major financial services, and highlighted the rationale for why individuals do not have each of these services. The having "no money" perspective is a very strong reason for not having savings (79 %). Another reason for not having a savings account is being 'unemployed' at 9 %, which is close to the notion of 'no money'. A small percentage, 3.6 %, claimed they do not see the benefits of having a bank account. The World Bank Report 2011 broke down the percentage of respondents with no bank accounts due to 'no money' reasons according to their income decile. Across all income deciles, people identified lack of income as the most important constraint to opening a bank account. Geographic barriers and interest rates do not emerge as major constraint to financial access. The findings from the report suggested that consumer education is required to convince people of the benefits of having a savings account will be valuable in order to increase financial inclusion (World Bank 2010b) (Fig. 5.2).

Another important factor for the low access to the financial services is the lack of knowledge, which is evident for insurance, loans, and credit.

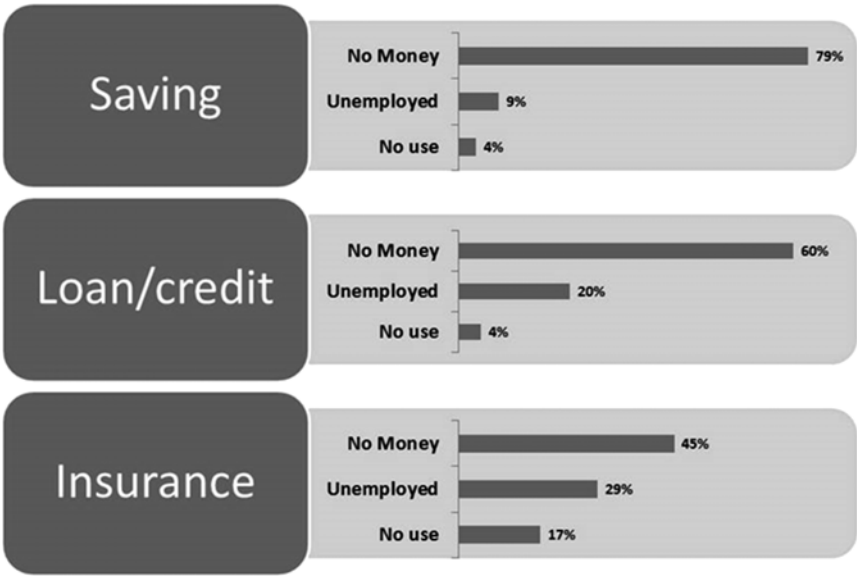

Fig. 5.2 Reasons for low use of financial services.
Source: World Bank (2010b)

As mentioned previously, around 40 % of the population did not borrow at the time of World Bank Survey in 2010. Approximately 60 % mentioned they could not provide documentation needed to borrow, 4 % did not have sufficient collateral/guarantee, and 20 % stated they did not need loans or credit. Hence, lack of knowledge of formal financial services needs to be addressed without delay when considering greater financial inclusion. From the borrower side, the survey also found that borrowers often did not know the interest rate they paid for their loans (World Bank 2010b).

Financial Services Among the Poor and Vulnerable

Using indicators described previously, Indonesia is still very much behind other Association of Southeast Asian Nations (ASEAN) countries. Table 5.3 depicts several indicators taken from the 2011 Global Findex database, which is focused on the demand side indicators. The database also provides

Table 5.3 Selected financial inclusion indicators, 2011

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Account at a formal financial institution						
Total	19.58	66.17	26.56	98.22	72.67	21.37
Female	19.21	63.1	33.71	98.21	72.64	18.91
Lowest 40 %	10.31	50.12	10.35	97.4	61.29	10.56
Account used to receive wages						
Total	7.7	26.3	8.48	52.5	33.5	5.8
Female	6.81	20.44	8.5	43.11	32.34	5.3
Lowest 40 %	1.27	12.81	2.44	44.62	21.22	2.54
Account used to receive government payments						
Total	2.64	7.49	5.53	48.49	9.12	2.16
Female	2.69	6.36	7.33	49.59	8.6	1.79
Lowest 40 %	1.24	6.06	3.09	50.05	8.57	1.01
Account used to receive remittances						
Total	6.14	9.61	12.19	9.66	17.24	2.22
Female	6.96	11.49	14.51	11.16	20.2	1.87
Lowest 40 %	3.24	7.89	4.23	10.06	14.76	0.92
Saved at a financial institution in the past year						
Total	15.29	35.41	14.71	58.41	42.8	7.74
Female	15.87	30.19	18.03	58.72	42.82	6.68
Lowest 40 %	7.78	22.3	3.05	51.92	36.39	3.81
Saved using a savings club in the past year						
Total	13.86	6.54	6.52	0.49	5.23	5.07
Female	15.98	8.66	7.75	0.26	6.45	5.11
Lowest 40 %	12.65	5.74	4.28	0.31	3.8	3.36
Loan from a financial institution in the past year						
Total	8.55	11.2	10.51	9.99	19.4	16.18
Female	8.15	10.28	12.84	6.28	17.93	15.24
Lowest 40 %	6.41	1.84	5.07	6.11	26.94	15.36

(Continued)

Table 5.3 (continued)

	Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Loan from family or friends in the past year						
Total	42.3	19.86	38.97	15.56	7.65	30.99
Female	42.57	16.84	36.55	13.38	7.46	27.04
Lowest 40 %	43.75	25.08	43.74	16.54	9.01	28.62
Personally paid for health insurance						
Total	0.9	16.4	5.5	–	24.1	17.5
Female	0.9	14.3	5.5	–	22.6	17.6
Lowest 40 %	0.3	4.0	2.2	–	20.4	12.0

Source: Global Findex database
Note: All percentages are for number of population 15 years and older

each indicator for the total population, 15 years and older, as well as for females, and importantly those belonging to the lowest 40 % of the population. Table 5.3 provides a quick comparison to other ASEAN countries.

In comparing Indonesia to Vietnam, they are closely aligned on several indicators, and Indonesia is in fact below the Philippines on several indicators. In 2011, only about 20 % of the Indonesian total population had an account at a formal financial institution. That percentage was slightly below Vietnam and the Philippines. Thailand was situated far above Indonesia, and Indonesia is even further behind in comparison to Singapore, where there was almost universal coverage in terms of accounts at a formal institution. Among the lowest 40 %, however, Indonesia was not very much different from Vietnam or the Philippines. In Singapore and Thailand, 53 and 33 % of the account is used to receive wages respectively. While in Indonesia only 8 %.

Public transfers, when managed properly, may be used to promote financial inclusion. Despite a significant amount of money released by the Indonesian Government for transfer payment, the main delivery method is still cash payment primarily through post offices. The use of formal accounts is still very limited. In cases where payments are made through banks, there are only limited efforts to ensure that it may be used to enhance financial inclusion. Indonesia lagged behind the Philippines, where the percentages of females and the lowest 40 % with formal accounts were higher. This is partly due to the mandatory payment of the Philippines' conditional cash transfer Programme through banks.[7] In addition to the public transfer, remittances from overseas workers have the potential to improve domestic financial inclusion. While remittances can be brought back in cash, more often bank transfers are much more efficient. The percentages in Table 5.3 are sensitive to the percentage of overseas workers in each country.

Formal saving accounts are considered as financial services that can reach out to the poor and the vulnerable. Unsurprisingly, for those in the lowest 40 %, savings are more common at informal saving clubs, which are more local, rather than at formal financial institutions. Examples of these clubs in

[7] *Pantawid Pamilyang Pilipino Programme* (or 4Ps) in the Philippines currently covering about four million families in the country. Payments are made to female caretaker of the family through a bank account that is opened at the time of the family's registration at the Programme.

Indonesia are traditional female arisan as well as cooperatives. The savings clubs and financial institutions are really substitutes, especially among the lowest 40 %. As suggested by the table, in more advanced countries with greater financial inclusion, the intensity of savings clubs is relatively lower.

Another type of financial services is loans. For all groups in Indonesia, including those in the lowest 40 %, borrowing from family members and/or friends is more popular than going to a financial institution. Indeed, access to financial institutions is limited, and this is not only due to supply side constraints. The lowest 40 % are rather illiterate about the benefits one may gain from financial inclusion and services. According to Financial Services Authority, Indonesia is still in its infancy for insurance with only 1.8 % of the population having insurance. The newly established *Jaminan Kesehatan Nasional* (JKN), which is a social health insurance started in 2014, has the mandate of universal coverage. Currently, JKN has a membership of about half the population, and the government pays for the premiums of about a third of the population.

Promoting Financial Services to the Poor and Vulnerable

Promoting financial services to the poor and vulnerable requires concerted efforts from all relevant agencies. Improving the different indicators depicted above requires a set of public policy measures that must be met by the appropriate private sectors responses, primarily from the financial institutions. From the public policy point of view, there are two ways to further bolster financial inclusion; first, enhancing the government-to-private (G-to-P) payment, public transfer, and second, providing microcredit schemes.

G-to-P Payment for Financial Inclusion

G-to-P payments comprise differing benefits, subsidies, and transfers made directly by the government to individuals or households. Such payments usually are placed under the poverty alleviation, social safety net, or social

protection Programmes. Indonesia has a number of Programmes that are G-to-P in nature and have the potential to improve financial inclusion.

Indonesian poverty alleviation Programmes are grouped into three clusters. Cluster one is the individual/household-level social assistance Programmes, comprising Raskin, Programme Keluarga Harapan (PKH), Bantuan Siswa Miskin (BSM), and what was referred to as Jaminan Kesehatan Masyarakat (Jamkesmas) that recently transformed into the Jaminan Kesehatan Nasional (JKN) in January 2014. The unconditional cash transfer such as the 2013 Bantuan Langsung Sementara Masyarakat (BLSM), despite its temporary nature, is also considered as a part of the Cluster one Programmes. The Cluster two are the community-driven development (CDD) Programmes, and include the Programme Nasional Pemberdayaan Masyarakat (PNPM) Programmes delivered by several line ministries. Cluster three are the micro, small, and medium enterprise development Programmes, with Kredit Usaha Rakyat (KUR) as the main initiative in providing microcredit guarantee schemes for the poor.

Several Programmes under Cluster one, namely the regular PKH and BSM as well as temporary Programmes such as BLSM, involve a cash transfer to individuals or households. These Programmes can be used appropriately to improve financial inclusion for the poor and vulnerable in Indonesia. The transfer payments, when appropriately channelled, can introduce this segment of the population to financial institutions and products. Below is a brief description of these Programmes.

Programme Keluarga Harapan (PKH) is a conditional cash transfer Programme, delivered by the Ministry of Social Affairs (MoSA) to the poorest 3.2 million families in Indonesia, approximately the lowest 7 % in the income distribution. Thus, by definition all PKH beneficiaries are poor because the 2014 poverty rate was still roughly 11.25 %. In 2014, the total PKH budget amounted to around IDR 5 trillion. Payments are made quarterly upon a verification process that the beneficiary family fulfils all of their responsibilities in the previous quarter (except for the first payment is made without any due verification process). Family's responsibilities include health check-ups for pregnant mothers, babies, and toddlers, and school attendance for school-age children in the family. The payment per family ranges between IDR 800 thousand to IDR 2.8 million per year, with an average of IDR

1.8 million per year per family. Payments are made to female caretaker of the family, which ensures that the transfer will benefit the children and household expenditures.[8]

Started in 2007, Indonesian PKH makes payments through the post office. PKH facilitators, the frontline social workers, usually help PKH families to claim their quarterly payment at a local post office. Motivated to increase financial inclusion among PKH families, an attempt was made in 2011 to get PKH payments to be made through the banks. To that effect, MoSA signed an agreement with Bank Rakyat Indonesia (BRI) to use *Tabunganku*[9] as the payment method in 2011. There were, however, several challenges to this initiative. Other than the fact that the poor do not necessarily have proper IDs for opening bank accounts, the *Tabunganku* turns out to be still 'costly' for the poor because they still have to go to the bank for the services, which bears some cost for them. A different model may be necessary for PKH payments through banks.

The government has also launched three rounds of temporary cash transfer Programmes; *Bantuan Langsung Tunai* (BLT) 2005, BLT 2008–2009, and *Bantuan Langsung Sementara Masyarakat* (BLSM) 2013. Each was implemented as compensation in response to the fuel price increase. The 2005 BLT provided payments to about 19.1 million households; the 2008 BLT paid about 18.5 million households; while the 2013 BLSM covered about 15.5 million households. Similar to BSM, the target households for 2013 BLSM were identified by way of the KPS. Each BLSM beneficiary received IDR 600,000 in two instalments of IDR 300,000 each in June-July and September 2013, amounting to the total budget allocated around IDR 12 trillion. In all of the three rounds, payments were made at the local post offices. In 2013, beneficiaries could bring their KPS accompanied by another proof of identifications, such as KTP, Kartu Keluarga, or proof of domicile from respective village heads or lurahs.

[8] More assessment on PKH, its features and future challenges can be found in Nazara and Rahayu (2013).

[9] *Tabunganku*, an initiative of Bank Indonesia, is a generic individual savings account with relatively simple terms and conditions. *Tabunganku* is regulated by a National Committee comprising several agencies. Banks implemented the scheme, combining mandatory and bank-specific optional features of the savings account. More on *Tabunganku* can be found at: http://www.bi.go.id/id/iek/produk-jasa-perbankan/jenis/Contents/Default.aspx.

Microcredit Programmes for the Poor

Microcredit is another way to promote financial services, allowing more people to access banks' products and expand economic capacity. There are a number of microcredit Programmes that are part of the Government's Programme to alleviate poverty and develop micro and small enterprises. These Programmes are scattered around and implemented by different government agencies. The private sector also views microcredit as good business, and thus banks and nonbanks have differing Programmes offering micro and small enterprises either start-up capital or capital for business expansion. This section will elaborate and compare the two Programmes that are part of the poverty alleviation Programmes. The Programmes should be targeted to reach the bottom segments of the income distribution. The two Programmes are part of the Cluster two and Cluster three Programmes, which are the PNPM Mandiri Perdesaan Programme and the Kredit Usaha Rakyat (KUR).

The Cluster two poverty alleviation Programmes include a community development agenda, which is implemented under the *Programme Nasional Pemberdayaan Masyarakat* (PNPM) Programmes. Aimed at allowing the poor to voice their needs, the Programme involves block grant transfers to communities who decide what to use the grants for. The majority of these grants end up as basic infrastructure development such as rural roads and bridges, small irrigation systems, public sanitation facilities, etc. The PNPM is implemented through a range of line ministries; the rural PNPM is under the purview of the Ministry of Home Affairs (MoHA). Under the rural PNPM, a proportion of the community grant can be used as revolving loan funds (RLFs) for use by local women business groups. This scheme is called the Simpan Pinjam (kelompok) Perempuan (SPP). The SPP scheme works on the basis of social capital at the community level. The women can establish a group with micro or small business proposals for community approval. PNPM facilitators help the group to put together the business proposal, and they accompany the group during project implementation.[10]

[10] Complete information on PNPM can be seen at: http://www.tnp2k.go.id/en/programmes/programmes/dprogram-national-programme-for-community-empowerment-pnpm-mandiri/.

Some of these RLFs have managed to promote financial inclusion among the population. Since the start of PNPM in 2007, in total the RLFs under the PNPM have amounted to about IDR 9 trillion. While RLFs do not necessarily involve individual or household transfers, well-managed RLFs usually rely on banking services.

Another microcredit Programme that is especially designed to promote micro and small enterprises is part of the Cluster three poverty alleviation Programmes, which includes KUR. KUR is a microcredit guarantee scheme whose goal is to allow more small and micro enterprises to borrow from banks with minimal collateral. Potential borrowers apply to KUR through participating banks and are still oblige to fulfil all banking credit requirements, except for the collateral. A task force, chaired by the Office of Coordinating Ministry for Economy, sets the national policy on KUR and it is implemented by participating banks. In practice, banks are given some targets of KUR beneficiaries by the government. As of 2014, the KUR through participating banks had channelled close to IDR 40 trillion.

Since KUR was originally meant to boost micro and small enterprises, the microcredit programme can be evaluated according to its ability to target the specific groups. Unfortunately as it turns out, the KUR is not pro-poor enough. The KUR turns out to target the better segments of the population rather than the poorer (see Fig. 5.3). According to 2013 Susenas, deciles 1 and 2—which means the lowest 20 % in the distribution—comprised less than 13 % of the total KUR beneficiaries.

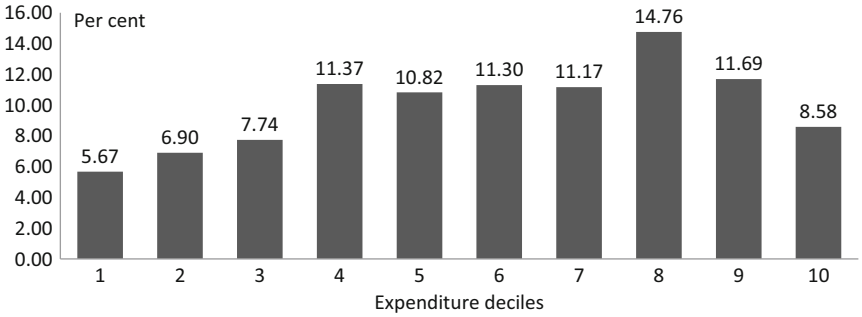

Fig. 5.3 KUR beneficiaries by expenditure deciles (in %).
Source: Susenas. 2013. Survey Sosial Ekonomi Nasional 2013. BPS. Jakarta

In contrast, at the other end, households in the three richest deciles (i.e., deciles 8–10) comprised about 35 % of the total KUR recipients. With about 11.5 percent of the Indonesian population living below poverty line (in deciles 1 and 2), it implies that KUR does not reach its target.

The main reason why KUR was not pro-poor enough stems from the fact that the KUR was implemented as a pure banking product, as all prudential banking regulations were still binding. Another hypothesis suggests that KUR may not be as successful because of high interest rates. However, there is no evidence suggesting that micro and small enterprises were unable to cover the interest from their returns. Because deciles 4–9 actually can benefit from KUR suggests that KUR is just as suitable for this segment, rather than the poorest one (Adam et al. 2015).

Table 5.4 provides a comparison between SPP-PNPM and KUR in terms of its beneficiaries. The comparison is made possible by specific questions in Susenas asking households whether they are the beneficiaries of KUR, SPP-PNPM, or other bank loans. Two characteristics can provide an initial indication: the household head's years of schooling and the average number of household members. The household head's years of schooling among KUR beneficiaries in 2013 was 9.3 years, and it is

Table 5.4 Characteristics of beneficiaries: KUR vs. other programmes

	Mean	Difference in mean among KUR and other schemes[a]		
	KUR			
			Other	Other
Characteristics		SPP-PNPM	Bank loan	Without loan
Household head's years of schooling (years)	9.30	1.08	1.07	0.39
Members of household (persons)	4.30	–0.04	0.07	0.42
Expenditure per capita (000 IDR)	736.08	174.19	143.20	–4.61
Poor households (%)	5.67	–6.50	–2.22	–4.39
House area (m^2)	82.99	13.80	10.25	12.96

Source: Susenas. 2013. Survey Sosial Ekonomi Nasional 2013. BPS. Jakarta
[a]Calculated as the mean of KUR minus the mean of the other scheme

higher than that of SPP-PNPM by 1.08 years, and is higher than that of other loan beneficiaries, or even of others without loan. The lower amount of schooling years is more closely associated with the poorer segments of the population implying that KUR beneficiaries have higher income than other schemes. In terms of the number of household members, the average number of 4.3 household members in KUR is not that much different from that of SPP-PNPM or Bank Loan. However, KUR's average of household member is higher than that without any loan.

KUR as highlighted is not as pro-poor as envisioned. The per capita expenditures of KUR's household are higher than that of SPP-PNPM or Bank Loan recipients (and not that much different from that of No Loan). This fact is confirmed if one examines the poverty rates between the Programmes. The poverty rate among KUR beneficiaries is 5.67 %, well below the poverty rate among SPP-PNPM recipients, which is 12.17 %. The poverty rate among KUR beneficiaries is also lower than those among bank loan recipients, or bank clients without loans. Finally, the size of the house of KUR beneficiaries is bigger than that of SPP-PNPM, the recipients of bank loans, and bank clients without loans.

It is easy to argue that microcredit Programmes would be able to promote financial inclusion if they can reach out the poor and the vulnerable. Programmes like KUR can take care of the collateral issue, but not other issues such as business potential. It is important that the development of micro and small enterprises among the poor and vulnerable is also equipped with business facilitation.

Models for Financial Inclusion

Initiatives: Saving and Credit Products

Savings and loans are two initiatives should be considered to expand and improve financial inclusion. Indeed, global studies[11] have showed that savings and credit product designs have had significant impacts on

[11] IFC Corp., "Product Design Case Studies," http://www.ifc.org/wps/wcm/connect/industry_ext_content/ifc_external_corporate_site/industries/financial+markets/publications/product+design+case+studies.

individual decisions to use financial services. In order to accomplish financial inclusion goals, it is therefore important to address several behavioural issues related to saving-credit habits.

1. Credit product design must deal with asymmetric information and moral hazard problems. One of the best innovations in credit products is group lending. A study by Ghatak (1999) showed how group lending was able to do adverse selection, using information from group members. Group lending also minimises the moral hazard problem through peer-pressure so that loans would be used for appropriate investments and must be paid back. However, there should be anticipation of force lending by community members to those who were unwilling or have no plan to borrow.

   In Bangladesh, the Grameen Bank has implemented *solidarity lending*, a credit scheme to a collective group, since the mid 1980s. Most of the Grameen Bank clients are women, and loans are typically for agriculture or retail purposes. Loans have low interest rates and do not require collateral from the group. However, when one member cannot pay the loan on time, other members must cover the repayment. The social ties serve as collateral for group lending. A similar mechanism also exists in Indonesia. The SPP was established under the Community Empowerment PNPM Programme as an RFL for women business groups in rural areas. Women in the village can establish a group with micro business proposals for community approval. The PNPM community facilitators help the group with the proposal, and provide supervision during the project's implementation.

   Another measure that has been experimented was individual loan product disbursement with grace period/delayed-start repayment. However, a study in India (World Bank 2014b) showed that these types of loan products allowed borrowers to earn higher profit by investing during the grace period. At the same time, the default rate also increased.
2. Similar to credit or loan products, the design of saving products also needs to consider some factors that might cause exclusion on saving. In general, savings require excess income, which the poor typically lack. In addition to that, savings take discipline, long-term goals to achieve, and there is also pressure from family/community members to share individual excess income.

Several saving products were designed to deal with the exclusion factors mentioned. Saving products designs ranged from soft persuasion such as prised savings (Kenya, Venezuela, Japan), lottery-linked savings to coerce savings like the social security Programme in the USA, involuntary savings, and financed by the government. To deal with the lack of discipline and relieve family pressure to share, there is commitment savings—bank deposits that carry penalties upon disbursement prior to its term, or prior to achieving a certain amount. In the Philippines, commitment savings took the form of a SEED account (Ashraf et al. 2010) which was designed and offered by The Green Bank of Caraga. A SEED (Save, Earn, Enjoy Deposits) account provides the individual saver the right to determine either a goal date or amount, and is subsequently unable to withdraw from the account until the goal is reached. The interest rate paid on the SEED account is similar to the interest paid on normal saving accounts; therefore it provides no other benefit of saving. The evaluation of the SEED accounts showed that 28 % of those offered to open an account opened an account. After a year, about 50 % of them continued to deposit money into their account, and in fact, 30 % regularly made deposits (Ashraf et al. 2010). Government assistance Programmes in the form of transfers for special purposes can also classify as product innovation, which first allows people to have excess income, and second forces people to save. Since it is involuntary saving, it would be funded by government budgets. The most prominent example of this type of saving measure was implemented in Brazil in 2003. President Lula Inacio da Silva started to unify four government Programmes into one conditional cash transfer, under the Bolsa Familia (CGAP 2012b).

Other than innovative breakthroughs in saving products, there are also some unbanked people who argued that there are too many requirements to enter the formal financial sector. Therefore, in some countries including developed countries like Germany and Britain, the promotions of basic saving accounts (minimum balance, minimum documentation requirement, and low fees) are still ongoing.[12] However, the effort needs

[12] Kempson and Collard (2013) and World Bank (2014b), pp. 51–103.

to be complemented by new business models that would help financial institutions serving their customers' banking purposes, while at the same time maintaining financial institutions' profitability. In Indonesia, *Tabunganku*, an initiative of Bank Indonesia, is a generic individual saving account with relatively simple terms and conditions. *Tabunganku* is regulated by a National Committee comprising several agencies. Banks implemented the scheme, combining mandatory and bank-specific optional features of the saving account.

The Global Financial Development Report 2014 highlighted that in low-income countries only 30 % of the adult population had bank accounts (compared to 58 % in developed countries). Banks and other financial institutions do not exist in remote areas of some of the countries. According to the Bill and Melinda Gates Foundation (2010), worldwide bank penetration averages only two branches per 100,000 people in the poorest quintile. Opening bank branches is costly, and banks usually limit their branches to areas where there are large numbers of potential customers who transact in large amounts of money. At the same time, from a low-income customers' point of view, the costs of opening bank accounts are high, ranging from transport and waiting cost, plus administration fee. Customers tend to choose to open basic account, but the limited features the bank offers with this type of account frustrates them. There should be a new business model developed to address the trade-off between client outreach and financial institution and bank sustainability. Again, low-income community outreach means extending services to accommodate large volumes of low-value transactions. Most of the time, these outreach activities do not drive sufficient revenues to cover their costs, let alone generate profits. Traditional banks must find low-cost delivery platforms, either using their own infrastructure or other companies'. In this regard, most goods and services are now being traded by third parties contracted by the owners or producers, which opens up some interesting possibilities for the banking sector. The banking sector might be one of a very few sectors in which direct trading still occurs (see Fig. 5.4). With this in mind, branchless banking practices have started to flourish.

Earlier development of branchless banking (telephone banking, ATMs, internet/mobile banking) tends to only add more types of services and conveniences for existing bank customers. It is sometimes referred

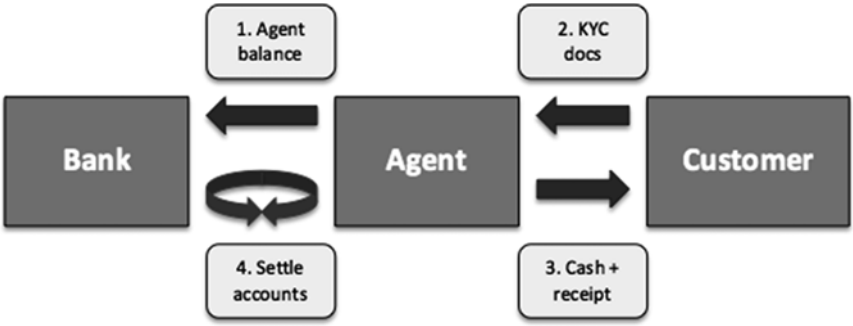

Fig. 5.4 Banking through third-party agent, branchless banking.
Source: Author's idea

to as additive branchless banking. Further development of Information and Communication Technology (ICT) enables the creation of new and mutually beneficial business models where branchless banking can extend consumer base to unbanked people using banking infrastructures and/or other technological platforms such as mobile phones. This definition of branchless banking is the "*the delivery of financial services outside conventional bank branches using information and communications technologies and nonbank retail agents, for example, over card-based networks or with mobile phones*". (CGAP 2012a, p. 1).

Banks can use mobile networks to deliver financial services in real time similar to direct face-to-face encounters with customers. Mobile operators have also worked in an encrypted-authentication framework to secure their customers' information. In terms of the business model, mobile telecommunication providers have been running prepaid platforms, which have dealt with both high volumes and real-time transactions.

In principle, there are two basic models of branchless banking: bank-based and nonbank-based models (CGAP 2006). In the bank-based models, customers have a direct contractual relationship with a bank in the form of a transaction account, a savings account, a loan, or other combination, although customers deal with a retail agent on the bank's behalf.

Each retail agent communicates electronically with the bank either through a mobile phone or an electronic point-of-sale terminal. When customers go to a retail agent to conduct certain transactions, the retail

agent will check their identification and process the transactions. Cash-in and cash-out will be performed from the retail agent's cash drawer. An electronic record of transaction will be issued.

The most prominent example of bank-based branchless banking is Brazil. In the 1970s, the term "bank correspondents" was already used in Brazil to refer to all retail agents including small supermarkets, pharmacies, post offices, and lottery kiosks that deliver limited financial services such as receiving loan applications, analysing credit and personal information on loan applicants, collecting loan payments, and processing data. It did not really take off until three decades later (World Bank 2006). In 1999, the Central Bank of Brazil issued regulation permitting retail agents to open bank accounts, cash deposits, conduct bill payments, and withdrawals. Following the reform, Caixa Economica Federal, a state-owned bank entered into a partnership agreement with over 9000 lottery kiosks to establish a large-scale retail agent scheme. In 2001, Bradesco, the largest private bank in Brazil, won a public bid that gave it exclusive access to more than half of the country's 10,500 post offices (World Bank 2006). Bradesco uses different models to manage its distribution channels. Its more than 18,000 Bradesco Espresso correspondents are managed by Bradesco branches. Bradesco established Banco Postal as a wholly owned subsidiary that serves remote areas with limited banking infrastructure, and urban areas with high unbanked levels. Account holders at Banco Postal are also Bradesco clients, with access to the same services as regular Bradesco customers. However, Banco Postal has extended hours and is more accessible for the poor. Currently, there are more than 150,000 registered agents in Brazil covering 5564 municipalities.

Each post office with a Banco Postal is linked to a Bradesco branch via satellite so transactions can be conducted in real-time using Bradesco's network. Bradesco trains Banco Postal staff to provide customers with information about the bank's products. Services include submitting applications for new accounts, withdrawals and deposits, bank statements and balances, sending loan and credit card applications, and bill and tax payments.

In the non-banked models, customers have no direct contractual relationship with a bank. They exchange cash at a retail agent in return for an electronic record of value, known as a virtual account. This virtual account is stored in the server of a non-bank institution, such as a mobile

network operator (MNO) or an issuer of stored-value cards.[13] The owner of the virtual account can use it to make purchases, send the value to other participants in the system, and receive payment from other participants. Customers and owners of virtual accounts can visit retail agents when they need to add value or convert stored value back into cash.

The bank-based and nonbank-based models can function in combination when the issuer of stored-value cards is a bank (See below for the GCash in the Philippines).

Greater Inclusion Through the Payment System

A payment system is defined as a set of *instruments, banking procedures and, typically, interbank funds transfer systems that ensure the circulation of money*.[14] Bank Indonesia[15] defined its payment system to cover the legal and regulatory framework, institutions, and mechanisms used to transfer funds to settle liabilities arising from economic activities. There should be payment instruments and clearing mechanisms to finalise settlements. In addition, there must be institutions involved such as banks, non-bank financial institution, non-banks fund transfer institutions, and the central bank.

Technological progress in the financial system plays an important role in the design of a robust electronic payment system, which is one of the driving factors for the new wave of financial inclusion. On the one hand, technological progress and innovation can support the development of banking products that aim to increase people's access to savings, credit, or other financial products. On the other hand, advances in technology, particularly in the form of the development of electronic payment systems, can become a separate mechanism to promote financial inclusion, especially through the non-banking system.

Electronic payment systems can be a gateway for people to access financial service products through several different ways. First, on the supply side, the retail payment system can be an efficient and extensive factor that

[13] CGAP (2008).

[14] Bank of International Settlement (2003), p. 38.

[15] http://www.bi.go.id/en/sistem-pembayaran/di-indonesia/sekilas/Contents/Default.aspx.

can enable the expansion of formal financial services to the unbanked segment of society that is not yet covered by banks, as well as providing the basic infrastructure to deliver financial services. Second, from the demand side, the expansion of formal financial services may be driven by the lack of an adequate informal alternative. Thus, once connected to the e-payment system, consumers would have access to a range of other financial services. Third, the electronic payment system can also enable consumers who are relatively new to financial services to develop trust in financial services and the institutions that manage them. Thus, a digital payment system can be a strong driving factor towards greater financial inclusion.

The digital payment system can play an important role in enhancing people's access to financial products. However, it is essential to further explore the types of contracts, investments, and business models that will allow it to happen. The business models and the partnerships have to be able to simultaneously provide security, ease of exchanging digital information, and low cost of services. Implementation remains a challenge for a long time, even in developed countries. Hence, it is interesting to analyse how developing countries can respond to the challenges, considering inadequate financial infrastructure as well as a predominantly poor population who are yet to be covered by the banking sector in developing countries.

One of the key elements in the digital payment system is the electronic transaction infrastructure development, for example, electronic money (e-money) and mobile money (m-money) systems. M-money systems can be briefly defined as the ability to access and activate electronic financial services digitally, through mobile phones. M-money services include financial services such as mobile payments, mobile savings, insurance, credit, and banking. Mobile payments service may cover P2P (people-to-people), C2B (consumer-to-business), for example when conducting transactions at retail stores, B2B (business-to-business), for example payment for inventory procurement between businesses to reduce the use of cash money, and B/G2C (business or government-to-consumer), which can take the form of salary payments, benefits, and pension fund payments. Each category represents potentially different markets.

In 2012, there were approximately 100 m-money schemes in developing countries. However, only a few of them can be considered sustainable, such as M-PESA in Kenya, MTN in Uganda, and GCASH and Smart Money in the Philippines (World Bank 2014b).

In the development of m-money businesses, there are two main agents: banks and mobile network operators (MNOs). Both see the advantages in combining each of their strengths to create and deliver mobile financial services. Many banks and MNOs around the world are considering the type of business model or partnership that is most appropriate given their respective conditions. An International Financial Corporation (IFC) study (2011) explained three types of business models in the development of m-money systems throughout the world from the main actor's perspective; these models are first, bank-centric; second, MNO-centric; and third, collaborative. Each of these models has both advantages and disadvantages.

In the bank-centric model, the main actor is the bank or group of banks. In this model, the acquirer bank is responsible for developing the Point of Sale (POS) system and negotiating with the stores and merchants. Additionally, there is the issuer bank, which is responsible for the development of m-payment applications, including development of Near Field Communication (NFC) payments, for example with Visa or another card's payment, as well as payments through mobile phone applications. The advantages of this model for banks are the potential for new customers, new revenue through micropayments, control over the system, and reducing risk. The disadvantages include a lack of incentives for banks to apply this model, especially if they have previously invested in traditional banking infrastructure such as debit cards, credit cards, prepaid cards, and so on. Likewise, MNOs do not have enough incentives to invest in this system due to its limited role.

In the MNO-centric model, the key actor is the MNO. Banks may take part, but not as the decision maker and leader in the development of m-money systems. The MNOs are responsible for the development and instalment of the payment applications on consumers' mobile phones or any electronic devices. MNOs are also responsible for providing POS equipment for merchants. MNOs are able to handle the payment process and link it to the banks, so that the banks can have a role in processing some parts of the payments. This model relies on the dominant MNOs that it can convince other partners to join. The advantage of this model is a clear incentive structure. For MNOs, these systems increase their customers' loyalty and yield some additional revenue from their customers. While the drawback is the cost of the roll-out, such as agent

development, which requires substantial investment commitments. In addition, the minimum role of banks can potentially cause some uncertainties for consumers in terms of security of their savings and transactions. An example of this model is the M-PESA in Kenya.

The third model is the collaborative model. This model involves the three main actors, which are the banks, MNOs, and third parties. Each of these three actors bears more or less the same cost of launching and operating the model. The advantage of this model is that every actor receives revenue. The cost structure also becomes cheaper because it can be divided based on the expertise of each stakeholder. The disadvantage is that this model is quite complex and difficult to manage. Generally, it takes one of the dominant parties to drive this model. However, it is quite difficult to do so in such a collaborative partnership. In this model, the price may be higher than other countries because each stakeholder wants some share of the revenues.

The ideal strategy for partnership in the development of m-money businesses is different, depending on each respective domestic context. In countries such as Kenya and Nigeria, given the lack of available financial infrastructure and high unmet demand, MNOs are the ones with the highest likelihood and incentives to develop m-money systems. Although the MNOs can work with the banks, MNOs can actually provide m-money services themselves. In countries with more developed financial infrastructure and higher proportions of bank outreach to the community, such as Sri Lanka and Thailand, there are pressures for the MNO to provide its financial services in cooperation with existing actors in the financial sector. Competitive strategy in this stage tends to focus on cost leadership, because the m-money system competes with the existing banking system. While in countries with more sophisticated, efficient, and competitive financial sectors, such as Brazil, Japan, and the USA, the collaborative model is more likely to be applied.

Obviously there are a lot of factors involved in determining the most suitable business model. Thus, policymakers would have to consider them in order to decide which one of these models or a combination of them is the most appropriate for the development of mobile payment system in Indonesia. The business model used is of utmost importance because it will significantly shape the electronic payment system, which can be one of the key enablers toward financial inclusion in Indonesia.

Mobile Money for G2P Transfer

One example of an m-money scheme that has been quite successful for delivering G2P transfers is the distribution of conditional cash transfers (CCT) in Brazil. Since 2006, the Brazilian government has implemented a welfare Programme called Bolsa Familia for poor people. Bolsa Familia, begun in October 2003, is distributed in the form of CCT. The government uses Bolsa Familia to target two types of families: the poor and very poor, each with a different transfer value. There are two types of benefits that can be obtained, basic and variable, which depend on the composition of the family and income level. As of May 2011, the Bolsa Familia Program (BFP) had reached 12.9 million poor families, which is roughly equal to 30 % of the Brazilian population. The distribution of BFP is conducted through the banking system, namely through Caixa Economica Federal (CEF), which incorporates the payment of benefits to the recipient's electronic account, which can be accessed through electronic benefit cards (EBC). The distribution takes places on a monthly basis.

The government institution that is designated to oversee the distribution of BFP is the the Ministério do Desenvolvimento Social e Combate à Fome (Ministry for Social Development and War Against Hunger—MDS), and the deliveries are carried out by CEF, a Brazillian state-owned bank. The CEF is responsible for producing EBCs, which are distributed to BFP recipients according to the list provided by the MDS based on the single registry database (Cadastro Unico) managed by the government. The distribution of EBCs can be conducted at the recipients nearest CEF office, the post office, or at a government sponsored event. Since 2006, the CEF EBC has sent the card to the recipients via the postal service. Before a recipient can withdraw their benefits, recipients must first register their PIN number, which can be done in the nearest CEF office. The withdrawal can be done at the nearest CEF branch office or at another specified location. In total, there are 32,000 locations across Brazil in which BFP recipients can withdraw funds. Sixty-five % of beneficiaries withdraw their funds via lottery points, 30 % via CEF ATM, and 5 % through a particular store or supermarket that is granted access to distribute the BFP (Lindert et al. 2007).

The benefits are distributed on the same date every month, ranging from the 25th to the 7th of the following month depending on the Social

Identification Number (Número de Identificação Socia) of the BFP recipient. This distribution method is intended to reduce the possibilities of long queues, which may occur if the delivery of benefits to BFP recipients is done on the same day. This distribution method also is aimed at preventing supply bottlenecks at local merchants who would have faced excess demand if the distribution of BFP had been done on the same day.

The BFP recipients have 90 days to withdraw the funds, and the funds that are still left in the account after the 90 days will be returned by the CEF to the MDS. In 2005, it was reported that the efficiency of the distribution of BFP is around 93 %, highlighting how successful the Programme has been in distribution funds to its recipients. Ninety-seven point 1 % of the received funds were withdrawn within 30 days, and 2.2 % were withdrawn in 60 days after the transfer. Part of the BFP EBC account is that this account is considered a limited-purpose instrument, which means that the recipient cannot deposit money into the account; the account should only be used to receive BFP payments.

According CGAP (2012b) research, 84 % of BFP transfers were made through limited-purpose instruments, such as the EBC. However, 15 % of BFP recipients still withdraw funds through a mainstream financial account, which is the basic standard account from Bank Caixa Facil.

Additionally, the CGAP (2012b) report highlighted that some countries can be used as a as they are both seeking to develop the electronic government payment and increase financial inclusion; possible benchmark countries include Brazil, Columbia, Mexico, and South Africa. These four countries offer different kinds of government transfer distribution models. However, CGAP (2012b) revealed that among the four countries, Brazil is the one able to distribute government transfers with the lowest cost structure. Based on the indicator of weighted average fee per payment and cost by type of instrument, Brazil's costs are significantly lower than the other three countries.

Brazil case has proved that it is cheaper to use a financially inclusive account than the limited-purpose instrument because the fixed costs to provide payment via commercial banks are borne by more people than the number of beneficiaries of G2P transfer (CGAP 2011). The investment for supporting infrastructure of special-purpose payments can also increase the cost of distribution, especially if the investment is short term.

Significant financial innovations in product design, infrastructure, and payment systems in many countries along with accompanying regulations demonstrate the range and dynamics of financial inclusion strategies. For each country, their strategy may aim at overcoming unique challenges such as lack of alternative financial resources, for example; an ineffective domestic capital market; burdensome regulations or in some countries where the opposite prevails; and improperly designed financial instruments.

With the banking sector in Indonesia holding 79 % of financial assets, the number of people still untapped is significant. Bank penetration has only reached 40 % in 2012, according to a 2012 World Bank Survey. The government and Bank Indonesia have developed national financial inclusion strategies aimed at reducing barriers to financial access and improving financial usage to raise the populations' welfare. Included in the strategy has been designing appropriate savings and credit products, while at the same time allowing sophisticated technology to expand financial access to unbanked people. E-banking, m-money, and other digital financial instruments are key to a more inclusive Indonesia. The most recent data from GMSA Intelligence showed that Indonesia's telecommunication coverage is much stronger than banking penetration—almost 121 % penetration in mobile phone, compared to only 40 % bank penetration. Learning from other countries' experiences, particularly those with similarities, can be beneficial as one could study the differing approaches and find workable solutions to enhancing financial inclusion implementation.

Indonesia: Moving Towards a Digital Payment System

National Strategies

The Indonesian government has attempted to address inequality challenges through improving the fiscal and tax structure, refining subsidy policies, and enhancing financial inclusion. Exposure to financial sector will allow people with limited cash liquidity to smooth-out their consumption and engaging in investing. In addition, enhancing financial

access will allow people to receive insurance protection (Cole et al. 2013) and expand their entrepreneurship skills, depending on their borrowing capacity (Bruhn and Love 2014).

Since 2010, Bank Indonesia has launched financial-inclusion related Programmes such as *Ayo ke Bank* Programme, Indonesian Saving Campaign, and Tabunganku—a basic savings account product. In June 2012, the government introduced the National Strategy on Financial Inclusion. In 2013, a pilot project of branchless banking was launched with participants from five banks (Bank Mandiri, Bank Rakyat Indonesia (BRI), Bank Sinar Harapan Bali, Bank Tabungan Pensiunan Nasional (BTPN), CIMB Niaga) and two telecommunication companies (PT XL Axiata, PT Telekomunikasi Seluler).

In line with the Indonesian Financial Inclusion vision, which seeks to achieve a financial system that is accessible to all segments of the population; that promotes economic growth, poverty reduction, income equality, and that helps ensure financial stability.[16] Framed in this light, Indonesia developed the National Strategy for Financial Inclusion in 2012. This strategy was developed with close cooperation between Bank Indonesia and several government ministries. There are three main target groups of this strategy, which are the low-income poor, the working poor, and the near poor (Table 5.5).

More specifically, the low-income poor group consists of people with very limited or no access to any type of financial products, with no ability to save and repay credit, and high exposure to community level shocks. The working poor grouping consists of poor people who are self-employed or run Micro, Small, and Medium Enterprises (MSMEs), who informally save, have access to informal credit, and have some buffers against shocks although they are still heavily affected. Lastly, the near poor group are the people with some ability to save, access to formal banks and to formal and informal credit, and a wider range of coping mechanisms against shocks. In addition to these three groupings, there are special needs groups that are also targeted in the strategy; these groups include domestic and international migrant workers, women, and people living in remote areas.

[16] National Strategy for Financial Inclusion Working Group (2012), p. 6.

Table 5.5 Targeted segments and financial products in National Strategy for Financial Inclusion

			Special needs		
	Low-income poor	Productive poor/ MSMEs	MWs	Remote areas	Non-poor
Savings	No frills account (TabunganKu) PKH through savings (BRI)		TKI savings and remittance services		
	Mandatory no frills type account (e.g. TabunganKu) to banks/NEW TabunganKu				
Credit		Cluster programme PNPM KUR Linkage programme Credit rating and establishment of private credit bureau	KUR TKI		
Savings + Credit		Link of TabunganKu to start up loan			
	Agent banking				
Insurance	Jamkesmas Microinsurance development Jamkesmas – microinsurance link		TKI insurance		
Savings + credit + insurance	Bundle insurance programme (credit/savings + insurance)				
Transfer facilities	G2P – branchless banking link				
	Mobile money				Mobile banking

Financial education	Ayo ke Bank and 3P		
	Financial education by local government	Financial education for SME	Financial education training for MWs & families
	Financial education through intra-extra curricular activities for students (start at elementary and junior high school while senior high and university will be in the following stage)		
Financial identity		Financial identity number	
	Financial identity number		
	Single identity number (link between financial identity number and e-KTP)		
Regulation	Microinsurance regulation development		
	KYC Assessment to small value customer using outsourcing party		
	Regulation on financial identity number		
Legend	On going	Will be implemented	Potentially implemented

Source: TNP2K's National Strategy for Financial Inclusion (2012)

The National Strategy for Financial Inclusion consists of several initiatives related to savings, credit for MSMEs and individuals, insurance, remittances, financial education, financial identification numbers (FIN), regulation, and consumer protection. Each of these initiatives is tailored to the needs of specific targeted segments.

Saving-related initiatives are aimed at improving access to savings, especially among the low-income group. These initiatives include promoting G2P transfers through savings accounts, promoting basic bank accounts for the poor and low-income customers, strengthening cross-institutional cooperation, especially between banks, post offices, and retail networks, to offer nontraditional ways of saving, and revisiting the Know-Your-Customer (KYC) regulations for small value customers.

For the working-poor group, the proposed initiatives are to support the development of MSMEs, using either already-existing or new activities. These activities include providing sustainable PNPM-RLF, better targeting of the KUR Programme, providing credit rating services for MSMEs, expanding the local credit guarantee corporations (Perusahaan Penjamin Kredit Daerah), and encouraging value chain financing linkages which involve banks, finance companies, large scale enterprises, and small-to-medium enterprises.

Some initiatives to improve insurance access for the poor focus on promoting insurance products, which includes products such as micro insurance. In addition, the government's role is to foster innovation using incentive schemes and providing a robust regulatory framework. One of the initiatives stated is to encourage financial institutions to promote insurance products through bundling savings and credit products together.

Migrant workers and their families will benefit from a more intensive ICT use, particularly for the convenience of distributing remittances. Therefore, the strategy also includes initiatives to promote studies and pilot projects on m-money, which include finding the appropriate incentive schemes to ensure the involvement of the private sector. A pilot study by private sector and government on expanding financial transactions through ICT will be conducted according to the strategy, given that Indonesia already has a relatively good rate of cellular phone usage.

Some financial education initiatives intended to increase consumers' knowledge and awareness of financial products are mentioned in the strategy. These activities include strengthening existing financial education programmes, such as "Ayo ke Bank" and 3P, and recommending new and innovative programmes, for example, the national savings day, and including financial education in the school's curriculum through cooperation between Bank Indonesia, the Financial Services Authority, and the Ministry of Education and Culture. Other initiatives include encouraging local governments to provide financial education and providing financial education for future migrant workers and their families, which may include entrepreneurship and financial management.

To reduce asymmetric information regarding customers' profiles, the strategy encourages a pilot project on FIN, which is to be designed in line with the Single Identification Number (SIN). However, finding the right incentive schemes for MSMEs to voluntarily register remains a challenge.

Meanwhile, regarding regulation and consumer protection, the initiative is to support consumer protection rights related to microfinance institutions (MFIs), particularly by providing an enabling regulatory environment for strengthening MFIs at the regional level.

The strategy also states some institutional and functional arrangements to consider before implementation. First, since the banking sector will remain important in enhancing financial inclusion, it is critical to strengthen the branch networks to reach a greater proportion of population. Second, fostering cooperation between banks, MFIs, non-bank financial institutions, and non-financial institutions is required. More specifically on MFIs, the government needs to provide a legal basis for their operations that will give them authority to deliver various financial services and activities, and simultaneously provide consumer protection. Third, to expand the coverage of financial services, government needs to support ICT innovation. On more specific issues regarding supervisory arrangements for MFIs, the strategy mentions the importance of establishing new institutions to deliver two key functions: first, supervision and development of MFIs; and second, consumer protection, which includes risk management and deposit insurance.

Adopted Model for Indonesia

One of the reasons causing exclusion from financial services is due to the segments low income. However, in the case of Indonesia for the last 10 years, the government's Statistics Indonesia database demonstrated how the Indonesian middle class expanded significantly. In terms of income classification, the bottom of the pyramid, which is defined as less than US$2 per capita consumption per day, declined from 62.2 % in 2003 to 37.4 % in 2013. A more detailed classification of this grouping showed that 11.5 % of them were considered poor, less than US$ 1.25 per capita consumption per day, while the rest, 25.9 %, were the vulnerable/near poor. The middle class, which ranges from US$2–20 per capita consumption per day, increased substantially from 37.6 % in 2003 to 62.4 % in 2013. Surely, one cannot call people in this group well-off, but they do have small amounts of money to save after paying for their minimum expenses. As income rises, many of the unbanked population become bankable and move from the informal to the formal financial sector. There are many factors to be taken into consideration. From the demand side and customers' perspective, some people do not have regular cash flow, only manage to have accumulated a small amount of savings, and cannot commit funds all the time. Therefore, product fees and high minimum balances will usually deter them from using financial services and savings products. The other problems causing the low financial inclusion in Indonesia are the geographical factors. First, access points are just too few for such a large country. The most recent data from the Bank Indonesia showed that bank branches and ATMs each for per 100,000 adult were recorded at 22.26 and 51.0 in 2013, respectively, only a relatively slight increase from 2010 when it was 4.10 and 23.99, respectively (Bank Indonesia 2013a). Meanwhile, on the demand side, number of bank depositors per 1000 adults increased from 715.98 in 2010 to 1103.44 in 2013, while number of bank loans per 1000 adults rose from 251.97 in 2010 to 281.94 in 2013 (Bank Indonesia 2013a). These numbers showed that financial inclusion progressed slowly, even after the government initiated programmes and strategy.

The goal of finding models where banks can get closer to the potential clients is being pursued by Bank Mandiri, which launched a pilot

project on branchless banking in 2013. This project is part an initiative by five big banks and two telecommunication companies in Indonesia. The pilot project tested the implementation of branchless banking using bank's agents for cashing in and cashing out the mobile money. The pilot demonstrated that people who were not familiar or were first-time users of formal financial services still needed assistance in filling out required forms and documentation; in some instances, people needed to have a face-to-face encounter when cashing-in their money.[17] From the pilot project, one can infer that the trust to the system was evident since people depositing their money to the agent instead of directly to bank's branch. There were people using the branchless banking to cash in money as high as IDR 1 million, while at the same time it was also evident that some people met the agents daily to store daily cash in and out at the level of IDR 5–10 thousand.

Indonesia encounters a new perspective of financial inclusion. In the past, financial inclusion was only associated with micro loans. While some programmes such as KUR were able to reach out to some of the lower income segments in Indonesia, the programmes did not reach all poor segments of society. The next wave of logic on how to get the poor to go to banks focused on savings products. Again, some savings products did manage to reach out to the previously unbanked people. However, there were still difficulties for the extreme poor to gain access and usage of the savings products, such as Tabunganku, despite the fact that it was linked to government cash transfer programmes. The extreme poor do not care about interest rates. For them, the monthly administrative cost and the minimum balance requirements are burdensome and represent barriers. In addition, the extreme poor and those living in remote areas are not enthusiastic about going to bank branches as it involves substantial transportation costs.

A new business model needs to be identified. This new model should increase the number of access points for financial services that are relevant to the poor. The branchless banking with agent model that had been

[17] Branchless Banking Bank Mandiri, Focus Group Discussion Material with OJK/Financial Services Authority, April 3, 2014. Other lessons learned from the pilot project revealed that there was an actual demand for savings accounts, transactions conducted were in small and routine amounts of money, customers were more sensitive to fees than to interest.

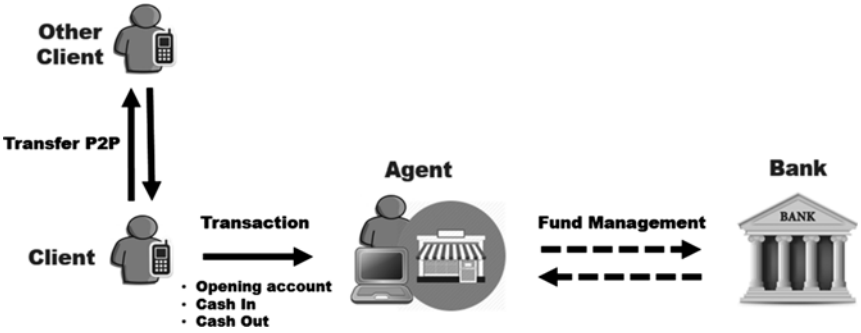

Fig. 5.5 Branchless banking—mobile based with agent.
Source: Author's idea

piloted seems to be quite promising. Therefore, the business model suggested to promote financial inclusion in Indonesia incorporates branchless banking with agents, which is mobile based. To reach massive targets in remote areas, the existence of branchless banking with agents needs to be supported by technology-enhanced delivery channels that can reduce costs. Research has showed that mobile banking technology is able to reach previously unbanked and low-income people in a relatively short period of time (Center for Financial Inclusion 2011). This type of branchless banking that is mobile phone based with agents[18] drastically reduces branching costs as well as minimises transaction expenses for customers (Fig. 5.5).

The question is now whether a mobile-based model can work in Indonesia. The answer depends on mobile penetration among the poor. In Indonesia, mobile phone penetration is high with 278 million mobile phone subscribers across all income levels, while the number of bank account holders is only 62 million (Bank Indonesia Survey 2012; Redwing Asia 2012). In aggregate terms, while this does looks promising, the question remains on what about the poor. The most recent information from the Unified Data Base (UDB) for Social Protection, which was used for the BLSM (Temporary Direct Cash Transfer) programmes in 2013, showed that 5 out of 10 households who received

[18] Defined as delivery of services outside conventional bank branches through the use of retail agents and ICT to transmit transaction details (Nazara 2014).

direct transfers owned cellular phones. The BLSM recipients comprise the lowest 25 % of households while the UDB itself comprises households belonging to the lowest 40 % of Indonesian income distribution. Among those who are in the UDB but not a BLSM recipient, the mobile penetration is about 6 out of 10 households. The bottom line is that among the poor and vulnerable, mobile phone penetration is quite high. Indeed, the model needs to address the fact that some of this group do not have mobile phones (TNP2K 2012) (Fig. 5.6).

Branchless Banking with a Digital Payment System

Regulatory Environment

Current financial services development, where a combination of technology and agents promises a breakthrough[19] in financial inclusion, must be accompanied by improvement in the country's regulatory environment. The Bank Indonesia has amended its regulations with Regulation no. 16/8/PBI/2014 dated April 8, 2014 (Bank Indonesia 2014) on e-money to support branchless banking with digital services.

The development of e-money had begun in 2007. However, it has not been successful since after five years (2012) as the number of registered accounts with a maximum balance of IDR 5 million of e-money holders only accounted for 0.4 %, and unregistered accounts with a maximum balance of IDR 1 million accounted for 8 % of the total adult population (CGAP 2013). Addressing the slow progress, Bank Indonesia issued a new regulation allowing full encashment of P2P transfers on electronic money at agents in December 2012. The regulation also allows cash payment points to provide a cash-out service without requiring individual funds transfer licenses per agent. However, the maximum balance in the e-money remained constrained. In addition to that, Bank Indonesia released a guideline to outsource some banking operations to Unit Perantara Layanan Keuangan (Financial Intermediary Service Units) in May 2013. These regulations provide more flexibility for both banks and nonbanks in providing e-money.

[19] Since it is able to both reduce costs and reach out more customers.

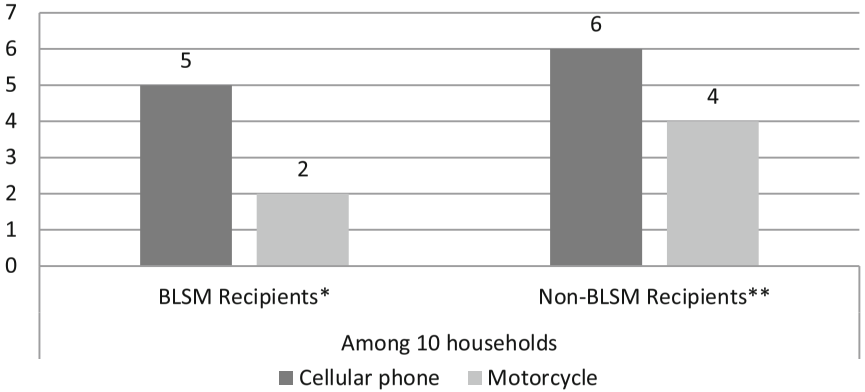

Fig. 5.6 Ownership of cellular phone among the poor and vulnerable: comparing BLSM and non-BLSM recipients. *BLSM recipient belongs to the lowest 25 % of household distribution. **Non-BLSM belongs to the lowest 40 % of household distribution.
Source: TNP2K (2012)

Weighing the risks associated with financial access, Bank Indonesia amended Layanan Keuangan Digital (LKD), digital financial services, regulation and issued PBI no. 16/8/2014 in April 2014. This was followed by issuance of two Surat Edaran/Circulating Notes, SE BI no. 16/11/DKSP and SE BI no. 16/12/DPAU, in July 2014, which stated that banks and non-bank institutions that can provide digital financial service, including fund transfers, must have e-money products. The latest regulations also rule that branchless banking with individual agents can only be performed by commercial banks with core assets of more than IDR 30 trillion or USD 5 billion (Bank Buku IV—Book IV Bank category). Commercial banks with core assets less than IDR 30 trillion and non-bank institutions may conduct branchless banking only with agents who have been established as a legal entity. This is part of the consumer protection aspect of the regulation. Bank Indonesia's careful approach is again reflected in the Circulating Notes 2014, holding that regulations on digital payment systems should able to manage operational risk, which is associated with the reliability of the technology network and infrastructure, reputational risks due to agent fraud, and systemic risk from weak security in the internal system organisation. In addition, the Circulating Notes also rules on cost transparency and consumer complaint procedures.

Besides Bank Indonesia, the newly established Otoritas Jasa Keuangan (OJK) Financial Services Authority has also drafted regulations under Layanan Keuangan Tanpa Kantor Dalam Rangka Keuangan Inklusif (LAKU PANDAI), Branchless Banking for Financial Inclusion, in August 2014. The draft has been circulated for some time among stakeholders, including industry experts, to obtain input and feedback. One of the most advanced articles in the regulation draft was a relaxed requirement in opening a basic savings account where it only requires a photo identity card issued by the government or a reference letter from local community leader. Banks and mobile network operators indicated concerns towards issues in the draft regulation such as agent exclusivity, consumer charges, and location prerequisites (OJK 2014a).

Branchless banking agents can be classified into two groupings; first, individuals, such as airtime reseller/cellular shop, warung, and so on; and second, legal entities, such as PT Pos Indonesia, PT Pegadaian, and

private companies with retail outlet networks such as Indomaret/Alfamart. According to OJK's LAKU PANDAI Guidelines 2014, agents can perform basic savings account services, including closing and opening accounts; cash-in and cash-out; transfer intra- and interbank; balance inquiries; micro loan services, including receiving micro loans, financing applications, and other services subject to approval by OJK and other authorities, such as providing micro insurance and digital financial services and e-money (with a separate agreement with insurance companies and e-money issuers) (OJK 2014b). Implicitly, OJK draft regulation allows banks and non-bank financial institutions, such as insurance companies, to perform branchless financial services using individual agents. This represents a shift from the existing e-money regulations, issued by Bank Indonesia, which only allow the five major banks with a minimum core capital of IDR 30 trillion to appoint individual agents. However, the OJK draft regulation adds eligibility requirements that only existing customers associated with banks for at least two years can become bank agents for both individual and legal entity agents. In addition, the OJK draft regulations mandate agents to partner with only one service provider. In contrast, regulators in Pakistan and Kenya mandate non-exclusivity of agents, for example, agents can partner with more than one bank/service provider, since in many remote areas setting up exclusive agent networks can be expensive and supply-constrained. In addition, it is sometimes difficult to find qualified agents in rural areas given the agents' eligibility requirements in term of capital, education level, and ability to use technology. For customers, a non-exclusive agent model is a better option since it will provide them with a range of choice between service providers.

Both Bank Indonesia and the OJK regulations stipulate that banks and non-banking institutions should be responsible for the recruitment of branchless banking and LKD agents and their actions, and they should apply proper risk management measures towards recruitment and supervision of their agents. In their respective Circulating Notes (OJK has only draft Circulating Note), both clearly instructed principal institutions to outline the roles, responsibilities, and minimum standards of risk management, consumer protection, and anti-money laundering rules in the contract between the principal and its agents. Banks and non-banking institutions that perform branchless banking with LKD should conduct continuous training for its agents and provide operation manuals.

Jump Start the Model

Nevertheless, all these important regulatory changes have now taken place to break the deadlock around the development of e-money and branchless banking, both crucial in the national strategy for financial inclusion in Indonesia. To move forward even further, a massive jump-start approach in providing access to previously unbanked individuals is necessary as prior experiences with introducing e-money in 2007 proceeded very slowly. Similar experiences occurred with Tabunganku, a basic savings account introduced in 2010, and in April 2014, the number of Tabunganku accounts stood at 12.04 million.[20]

Indonesia has significant potential to jump start the financial inclusion strategy, as highlighted by the fact that 40 % of Indonesians are receiving transfers from the government. G2P transfers have been predominately delivered in cash through post office networks. Other than a regulatory enabling environment for branchless banking and e-money,[21] there are few challenges that can be address through financial education and literacy programmes, such as discouraging habits of changing mobile numbers, and building awareness and a culture of using digital technology instead of cash.

There are three key features related to the use of branchless banking with LKD to distribute the G2P payment programme which are bulk registration, cost considerations, and gradual implementation. To receive G2P through digital payment, beneficiaries need to pre-register at both banks and MNOs. Following Bank Indonesia regulation on KYC,[22] all banks must ask customers to provide their name, address, occupation, ID number, expiration date, citizenship, marital status, fund sources, income, telephone number, and tax registration number (Nomor Pokok Wajib Pajak). Bank applicants should also inform the bank of the purpose of application. In the pilot project held in 2013, Bank Indonesia

[20] Data from Bank Indonesia (2014), http://www.bi.go.id/id/perbankan/keuanganinklusif/Programme/gimtab/Contents/Default.aspx.

[21] Including supporting B2B negotiations in system interoperability, building sustainable business models (among and between banks and MNO/other e-payment providers) and industry collaboration.

[22] UU no. 15/2002, PBI no. 3/10/PBI/2001, PBI no. 3/23/PBI/2001, PBI no. 5/21/PBI/2003, PBI no. 5/23/PBI/2003, SE BI no. 3/29/BPNP/2001, SE BI no. 5/32/BPNP/2003 and SE BI no. 63/37/DPNP/2004.

relaxed the implementation of KYC principles for account opening registration by allowing the use of a letter from a district head, reference letter from employers as a replacement of ID card.[23] On the other hand, registration of mobile phone user needs to be improved as previous regulation (Permeninfo no. 23/2005) had many loopholes in particular on registration administration which was previously imposed on the user. In the new Circulating Notes (Surat Edaran Badan Regulasi Telekomunikasi Indonesia No 161/BRTI/V/2014), registration of new and existing (prepaid) mobile phones will be administered by officials at authorized telecommunication outlets marked by official posters from the Ministry of Information and Communication.

Currently in Indonesia, there are 15.5 million households holding the KPS (TNP2K database, 2012).[24] The KPS data set holds 25 % of the lowest, meaning that the GoI already has household information (names—including heads of household and members of households, address, ID number, month and year of birth, and several other indicators). It is possible to move the data into the pre-registration for both the MNOs and banks when the government decides to use digital services for G2P transfers. Such a data migration will set aside potential hassles when dealing with bulk registration in short a period of time.

The second feature of G2P transfers through digital services is the cost considerations. In general, G2P transfer can be paid out electronically through two mechanisms; first, by a limited-purpose instrument usually in the form of a smartcard with limited use; transfers are made to a virtual account earmarked for the recipients, but the functionality of the instrument is restricted[25]; and second, to a regular financial account.

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[23] Bank Indonesia (2013b), http://www.bi.go.id/id/publikasi/geraiinfo/Documents/cf3d872a-5bab4fda86ada4428bf51162FINALGIJUNI2014.pdf.

[24] Currently Kartu Perlindungan Sosial/KPS is being replaced by Kartu Keluarga Sejahtera/KKS (Family Welfare Card). KKS is distributed to poor families who are eligible for a variety of social assistance including Raskin (rice for the poor), and savings amounting to IDR 200,000/month/family for two months of November and December 2014 to support the 25 % lowest-income families in the wake of rising domestic fuel prices—announced by the Government on November 18, 2014.

[25] Restrictions may take form in one or more ways: cannot store funds indefinitely (special dormancy rule applies, for example after 90 days, instrument issuer must return funds to the government), cannot deposit more funds, and funds can only be withdrawn at particular agents/cash

Other countries' experiences, for example in Brazil, South Africa, and the Philippines, showed that it is less expensive and more effective for countries using G2P transfers to be paid directly to regular financial accounts from the start. As regulations in Indonesia now allow agents to perform functions such as cash-in, cash-out services, and account openings, which will facilitate the business model of branchless banking and mobile based banking with agents. However, acquiring and managing agent networks requires high investment costs on the part of banks. The government needs to pay service charges to service providers (PSPs).[26] However, the government should not intervene in negotiations between these PSPs on how to divide service charges from government. The government also needs to keep clear from directly intervening in internal negotiations between commercial banks and their agents with regards to agents' fees and revenues. The government only needs to set guidelines on transparent pricing disclosure once both parties agree on service charges applied to customers when using agents' services.[27]

Aside from the registration process and cost considerations, transition period should be pursued in stages. In November 2014, the government used a KPS/KKS scheme to initiate the model. As mentioned previously, the Family Welfare Programme was launched to provide assistance in the form of savings provided to 15.5 million underprivileged families throughout Indonesia, amounting to IDR 200,000/family/month for two months in 2014 to compensate for rising domestic fuel prices.

For the 2014 fiscal year, the cash transfer programme through electronic/digital money for the poor and vulnerable was disbursed to one million families in the first stage with the provision of telephone sim cards containing Bank Mandiri's e-cash account.[28] At the same time,

points established only for the purpose of G2P transfers. These restrictions render recipients' accounts into temporary repositories of G2P transfer.

[26] Cross-country experiences demonstrated that transaction fees ranged between 1 and 4 % of the total amount of government transfers. See for instance, Zimmerman et al. (2014).

[27] See for instance Tarazi and Breloff (2011) and Lauer et al. (2011).

[28] First stage disbursement of cash transfer using digital services was conducted in nineteen (19) regencies/cities on November 8, 2014: Jembrana, Pandeglang, West Jakarta, Central Jakarta, South Jakarta, East Jakarta, North Jakarta, Cirebon, Bekasi, Kuningan, Semarang, Tegal, Banyuwangi, Surabaya, Balikpapan, Kupang, North Mamuju, Pematang Siantar, and Karo. The program was

the government also paid out cash transfers for the other 14.5 million households in the form of PT Pos' Giro/demand deposits. Both e-cash and demand deposits can only be disbursed to eligible heads of targeted households. In 2015, these 14.5 million families will gradually get a telephone sim card and the subsequent digital financial services (Fig. 5.7).

The implementation of the Family Welfare Programme is the realisation of branchless banking with digital financial services model with cooperation among telecommunication companies, banks, and PT POS Indonesia as agents. From 2015 onwards, the use of branchless banking in the Family Welfare Programme will be extended with the switch of in-kind subsidies into cash transfer. President Jokowi's administration has previously indicated that other subsidies for electricity and fertilisers would also be converted into cash transfers to the needy. The LKD system provides the basis for such a conversion.

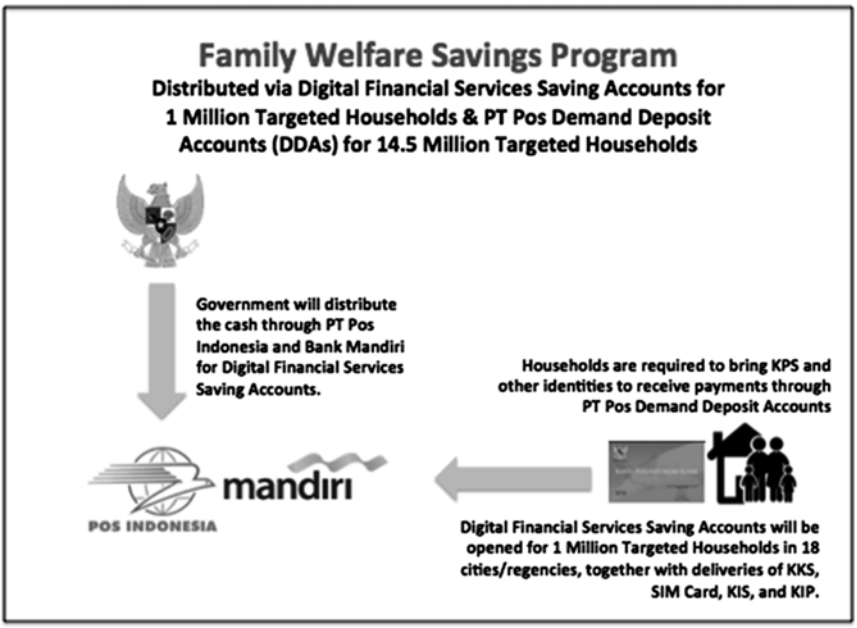

Fig. 5.7 G2P transfer through digital financial service, November 2014. *Source*: Author's idea

introduced on November 3, 2014, but earlier the cards were introduced publicly when President Jokowi visited Sinabung evacuee camps.

Challenges and Way Forward

Avoiding Inactive/Dormant Accounts

An even greater challenge comes after launching the financial inclusion programme through G2P transfers. Setting up a network of agents to reach unbanked people in remote areas to disburse G2Ps electronically not only requires capital for the high costs incurred in developing technology platforms, connectivity, and maintenance cost of keeping trusted and motivated agents, but also involves planning suitable and relevant products for previously unbanked people. It needs a stable flow of account-deposited G2Ps for the first few years. The Indonesian government still has several G2P transfers that could be channelled by agents through LKD. The G2P programmes include conditional cash transfer Programme Keluarga Harapan (PKH), which covers approximately 3 million beneficiaries, with a total budget of IDR 3.8 trillion and scholarship assistance (Bantuan Siswa Miskin) whose beneficiaries account for almost 11 million students and a total budget of IDR 6.3 trillion. On top of G2P transfers, there is also Village Law, which upon enactment this year, will transfer around IDR 100 trillion to all villages in Indonesia. The implementation of Village Law can also be transferred electronically using the same account created for the first phase of electronic G2P transfer.

Upon successful implementation of G2P electronically, there will be at least 15.5 million new accounts in Indonesia (the number of targeted households in the G2P). To prevent these new accounts from being left dormant, continuous financial education and literacy needs to be seriously enforced so these accounts will not end up as temporary repositories of G2P funds. G2P recipients need to move to savings and other financial products such as micro insurance and micro credits. These financial products should be carefully designed aiming to add value to the lives of beneficiaries, such as helping them manage money on a daily basis, build long-term savings, and borrow money to expand their entrepreneurship skills.

From Payments to Other Services

While payments are used as the entry point to enhancing financial inclusion in Indonesia, eventually we would like to see that the poor and the vulnerable in the country also get exposure to other bank and financial services. It is believed that this segment of the population would further benefit from savings accounts, insurance, and micro loans and credits. As products of financial institutions, OJK would play pivotal role in promoting the branchless banking services for the poor and vulnerable. The OJK Regulation on LAKU PANDAI needs to be supported by all financial institutions.

As has been shown earlier, the needs and the ability to pay do exist. Clearly, financial institutions need to create more and more products. For example, different types of weather insurance may appealto farmers or fishermen. Product bundling is also possible. In addition to that, product standards are pivotal. The service expansion is also mandatory on the business side. More merchants receiving LKD payments are required to promote the acceptance of electronic transactions.

It is also very important to improve the role of agents to expand financial services for all. Indonesia is still in the initial stage of agent banking operations. As a start, it is important to elaborate the more detailed rules and regulations on agents. Since banking is a business of trust, it is also essential to have a standard of conduct for agents. Regulators should also have a detailed map of agents as well as strategies to expand agents to remote areas.

Conclusion

Financial inclusion strategy became central in the fight against rising income inequality in Indonesia. With only 20 % of adults having financial access, current technological development in telecommunications represents a major opportunity as mobile phone penetration reaches over 90 % in the country. With access to financial services, people will be able to accumulate their assets, leverage, and expand their capabilities. Additionally, they will be better protected in life through savings, credit, and insurance products.

Considering specific characteristics of Indonesians, where the majority has not been exposed to financial services, a branchless banking and

agent-banking model with digital financial services would be the most suitable to be implemented in order to promote financial inclusion in Indonesia. Surely, adoption of the model would be ideal upon implementation of supporting regulation to guarantee infrastructure reliability and to protect consumer privacy. In addition, the adoption of the model should be initiated by the jump-start approach, using the government's social assistance programme. With G2P cash transfers, there will be 15.5 million households directly exposed to digital financial services. Many previously unbanked people will have opportunities to improve their quality of life since they are not restricted by the physical existence of banks or other financial institutions. People will be able to turn savings from the government into credit to expand their skills. Disbursing government social assistance through digital services will improve its accountability and allow the government to increase its efficiency since various types of social assistances can be combined.

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6

Financial Inclusion in Sri Lanka: Current Status and Issues

Ganga Tilakaratna

Introduction

Financial inclusion has been increasingly recognized as an important tool for alleviating poverty, improving household welfare, and promoting business activities. Yet, nearly 40 % of the adults (15 years and above) in the world do not have an account in a financial institution (World Bank 2015). In Sri Lanka, currently supports a large number of financial institutions (FIs), both formal and semiformal, providing a range of different financial services such as loans, savings, leasing and finance, and pawning facilities to its population. There is also evidence of high access to and use of financial services across income groups.

In the above context, this chapter presents an overview of financial inclusion in Sri Lanka and identifies some key issues that need

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to be addressed to achieve greater financial inclusion in the country. Section 'Financial Sector in Sri Lanka' provides an overview of the financial sector of Sri Lanka including various financial service providers—both formal and semiformal—and the geographical coverage of FIs. A comparison of Sri Lanka's level of access to FIs with other Asian countries is provided in section 'Financial Inclusion: Where Does Sri Lanka Stand Within the Asian Region?' Section 'Financial Inclusion: A Household-Level Analysis' analyses financial inclusion in Sri Lanka at the household level, looking at the extent to which households have accessed FIs for loans and savings; the extent of multiple borrowing and multiple savings; and the reasons for accessing multiple FIs for loans and savings. Section 'Financial Inclusion in Sri Lanka: Issues and Challenges' highlights a number of issues in achieving greater financial inclusion in Sri Lanka.

The chapter is primarily based on secondary information and data, apart from the household-level analysis of financial inclusion, which is based on a two-period household level survey (2006–2007 and 2009–2010) carried out in three districts of the country.

Financial Sector in Sri Lanka

There are a large number of FIs in Sri Lanka ranging from banks, leasing and finance companies, co-operatives, and various non-governmental organizations (NGOs). These institutions can be broadly categorized as formal financial intuitions and semiformal FIs. As shown in Fig. 6.1, formal financial institutions (FFIs) primarily include the regulated banks and leasing and finance companies; the semiformal FIs include co-operatives, NGOs, community-based organizations (CBOs), and state programs like Samurdhi/Divineguma. In addition to the formal and semiformal institutions, there are various informal sources of finance such as money lenders and rotating savings and credit associations (ROSCA) that provide financial services particularly to low-income segments of the population. However, the focus of this chapter is on the institutional sources of finance or financial institutions, i.e. formal and semiformal financial institutions.

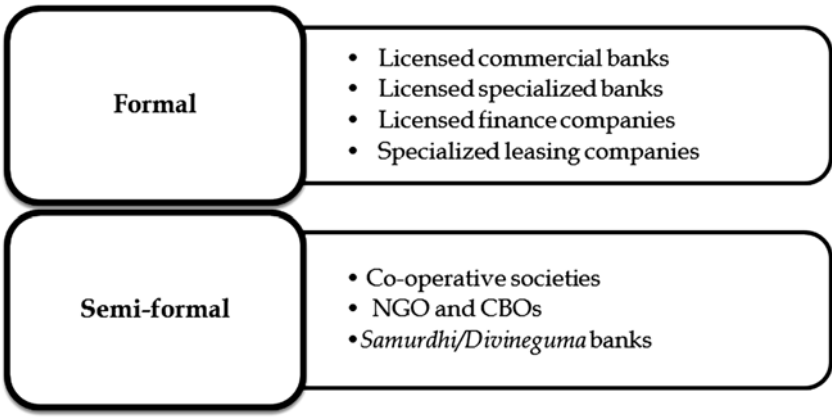

Fig. 6.1 Financial institutions in Sri Lanka.
Source: Author's compilation

Formal Financial Institutions

Currently, Sri Lanka has 25 licensed commercial banks (LCBs), including 13 domestic banks and 12 foreign banks. Additionally, there are nine licensed specialized banks (LSBs) including six state banks such as the Regional Development Bank and National Savings Bank and three private domestic banks. In contrast to the LCBs, these LSBs cannot accept demand deposits from the public and cannot engage in foreign exchange transactions. Currently there is a network of over 6500 bank branches and other banking outlets such as student savings units. Moreover, there are 2635 Automated Teller Machines (ATMs) and 34,904 electronic fund transfer facilities at point of sale (EFTPOS) machines. There has been a significant increase in the number of bank branches, ATMs, and EFTPOS machines in the past decade [Central Bank of Sri Lanka (CBSL) 2015, Table 6.1].

Currently there are around 17 bank branches (excluding student savings units) for each 100,000 persons in the country. The density of banks has increased over time, from less than 10 in 2009. As shown in Fig. 6.2, the density of banks increased notably between 2009 and 2014 in all provinces in the country. In particular, bank density more than doubled in Northern Province during this period, reaching of the level of 21.7 branches per

100,000 people by 2014. The East, North Central, and Uva provinces also experienced a substantial increase in bank density during 2009–2014. This is mainly due to the expansion of the banking sector in the North and Eastern parts of the country in the postconflict period (since mid-2009).

Along with the banking sector, Sri Lanka's leasing and finance sector has expanded. The total branches of licensed finance companies (LFCs) and specialized leasing companies (SLCs) increased from around 600 in 2010 to 1132 by the end of 2014, growth of nearly 90 %. While nearly

Table 6.1 Licensed banks and branches (2014)

Category	Number
Total no. of licensed banks	34
(i) Licensed Commercial Banks	*25*
Domestic banks	13
Foreign banks	12
(ii) Licensed Specialized Banks	*9*
Total no. of bank branches and other outlets	6554
(i) Bank branches	3508
(ii) Student saving units	3046
Total no. of ATMs	2635
Total no. of EFTPOS machines	34,904
Bank branches per 100,000 persons	17.0

Source: CBSL (2015)

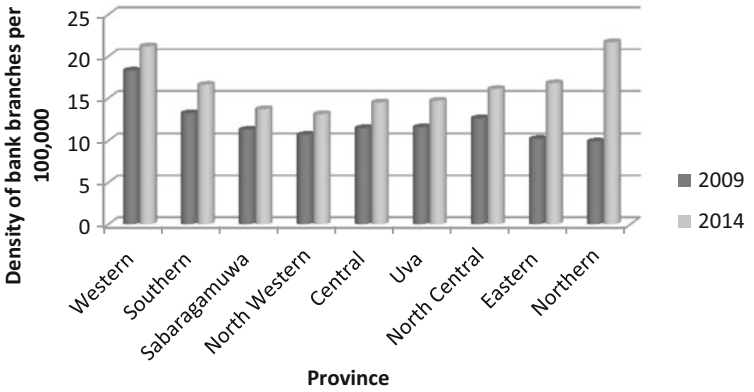

Fig. 6.2 Density of banks by province (2009 and 2014).
Source: CBSL (2014c). *Note*: 2014 figures are for November 2014

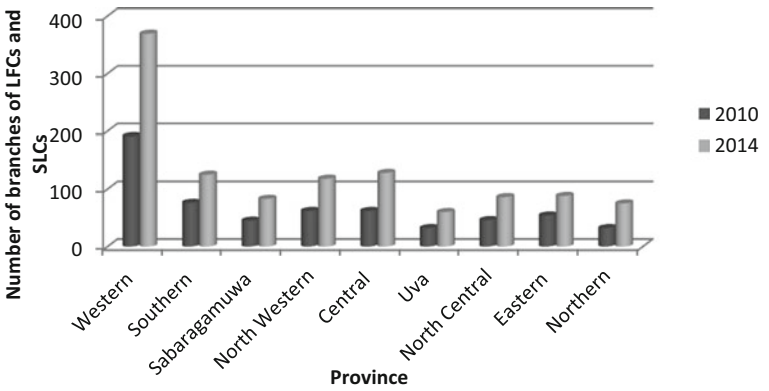

Fig. 6.3 Number of branches of LFCs and SLCs by province (2010 and 2014). *Source*: CBSL (2015, 2014a)

one-third of the branches are concentrated in Western Province, an increase in the number of branches was observed across all the provinces in recent years (Fig. 6.3). For instance, the number of branches more than doubled in Northern Province and Central Province, while an 80–90 % increase was observed in most provinces, including Western and North Western, Sabaragamuwa and Uva provinces.

Semiformal Financial Institutions

In addition to the FFIs discussed above, a large number of semiformal financial institutions serve the financial needs of various segments of the Sri Lankan population. These institutions include co-operative societies, NGOs and CBOs, and state programs like Samurdhi/Divineguma banks. These are largely microfinance institutions (MFIs) that have played an important role in achieving a considerably high level of financial access in Sri Lanka.

Co-operatives

The co-operatives are the pioneers in providing financial services in Sri Lanka. They are largely represented by two networks: the Thrift and Credit Co-operative Societies (TCCSs) and Co-operative Rural Banks (CRBs).

The TCCSs, established in 1906, were the pioneers of providing microfinance in Sri Lanka. TCCSs experienced a significant growth in absolute numbers and in membership, particularly after 1978, with the revival of the societies and the formation of a national movement based on a three-tier structure (Hulme and Mosley 1996). Currently there are 8424 enlisted TCCSs, although about 50 % of them are said to be inactive (GTZ ProMiS 2010). The total volume of savings of these societies amounted to Rs 5.6 billion by the end of 2013, exceeding their outstanding loan total portfolio of Rs 4.8 billion (CBSL 2014b). While all the active societies provide loan and savings facilities, about one-third also provide pawning facilities to members (GTZ ProMiS 2009, 2010). The loan capital of TCCSs largely comes from savings and bulk loans from the Sanasa Development Bank. However, some TCCSs also access external sources of funds.

The CRBs were established in 1964 and are regulated by the Co-operative Development Department. At present, there are about 2080 CRBs providing a wide range of financial services including credit, savings, and pawning. The number of CRBs increased significantly during the past decade. By the end of 2013, CRBs had savings amounting to around Rs 79 billion—the highest volume of savings mobilized by any MFI in the country. Moreover, they had an outstanding loan portfolio of Rs 39.5 billion with more than one million loan accounts by the end of 2013 (CBSL 2014b).

NGOs and Companies Providing Microfinance

There has been significant growth in the number of companies and NGOs—national and international—providing microfinance since the 1980s, many of which target low-income groups. They are diverse in terms of their scale of operation, services provided, lending methodology, and target group (GTZ ProMiS 2009). Only a handful of these NGOs consider microfinance their core activity; for most, microfinance is only one of many other activities like education, health and nutrition, and environmental conservation. A few NGO-MFIs operate at the national level, but most operate at the provisional, district, and divisional levels.

Samurdhi/Divineguma Banks

The Samurdhi Bank network, established in 1997 (and currently known as the Divineguma Community-based Banks), is one of the largest microfinance programs in the country. It operates through a network of over 1000 community-based banks and around 40,000 village-level societies serving over 2 million clients. Samurdhi/Divineguma banks provide clients with a wide range of loans and savings products. Loan products include income-generation loans, cultivation loans, housing, and consumption loans, while savings products range from member savings to non-member savings, women's savings, children's savings, group savings, and compulsory savings.

Despite the large number of MFIs in the country, only a small number operate at the national level. These include the TCCSs, CRBs, Samurdhi/Divineguma banks and organizations like Sarvodaya Economic Enterprise Development Services Limited. By contrast, the majority of MFIs operate in only one or a few districts.

Geographical Coverage of Financial Institutions

As mentioned earlier, MFIs—including the co-operatives like TCCSs and CRBs—play an important role in improving financial access in Sri Lanka. Taking into account all MFI branches and societies along with bank branches, CGAP (2006) estimated that there were more than 14,000 access points in the country—defined as a bank, co-operative branch, or a society where clients can deposit savings and withdraw loans.[1] On average, there is one access point for every 1300 people. This is a relatively high level of coverage of financial institutions compared to many other developing countries. Given the increase in the number of bank branches and branches of leasing companies in recent years, the total access points is likely to be even higher by now. This study further finds variation in the number of persons per institution (access points) across districts. The districts of Hambantota, Monaragala, Matale, and

[1] These include around 8000 TCCSs, more than 1000 Samurdhi societies and all the co-operatives, NGOs, banks, and societies providing financial services in the country.

Matara have a relatively high density, with at least one institution per every 1000 people. By contrast, Colombo and Trincomalee have the lowest density, with one institution for more than 2000 people, followed by Nuwara Eliya, Gampaha, Kurunegala, and Batticaloa where there is one access point for every 1500–2000 people (CGAP 2006).

A number of other factors need to be considered when analyzing these figures, however, such as population density and distance between financial institutions. For instance, a higher number of persons per access point (as in Colombo, with more than 2000 per access point) does not necessarily indicate a low level of financial access: Colombo has the highest population density and greatest number and most diverse range of financial institutions, with smaller distance between these financial institutions.

There is also evidence of multiple financial institutions operating in Grama Niladari (GN) divisions.[2] Tilakaratna (2012) and Tilakaratna and Hulme (2015) found an increase in the number of financial institutions per Grama Niladari division during 1990–2009. By 2009, there were about four financial institutions per division on average, and all divisions studied had multiple financial institutions by 2009.

Financial Inclusion: Where Does Sri Lanka Stand Within the Asian Region?

Sri Lanka has achieved a high level of financial inclusion compared to many other countries in the Asian region. As shown in Fig. 6.4, 82.7 % of the adults (15 years and above) in Sri Lanka have an account at a financial institution, either a bank or another type of financial institution, such as a credit union, microfinance institution, cooperative, or post office. This is much higher than the other South Asian countries like India (53.1 %%), Nepal (33.8 %), Bangladesh (31 %), Pakistan (13.0 %), and Afghanistan (10 %). As shown in Table 6.2, the share of adults with an account in the financial institution in Sri Lanka is notably higher than the South Asian average (46.4 %).

[2] GN Division is the lowest administrative unit in Sri Lanka generally comprised of 3–5 villages.

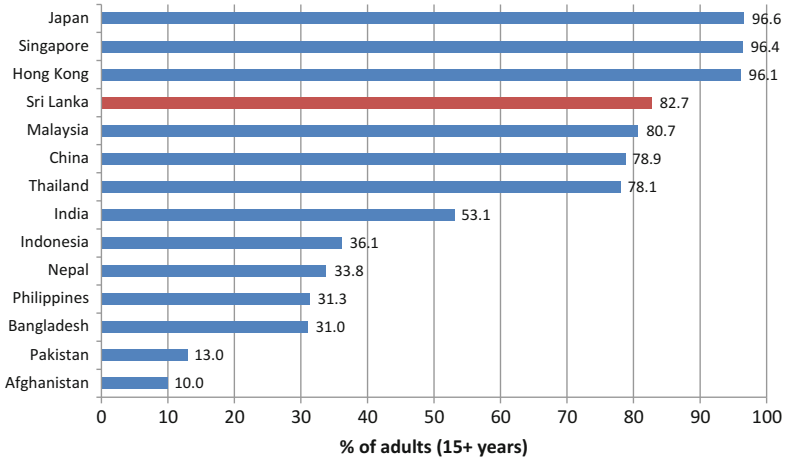

Fig. 6.4 Share of adults (15 years and above) with an account at a financial institution (2014).
Source: World Bank (2015), The Little Data Book on Financial Inclusion-15

Moreover, about 83.1 % of adult women in Sri Lanka have an account at a financial institution—more than double the South Asian average (37.4 %). In fact, the share of Sri Lankan women with a bank account surpasses that of more developed economies like Malaysia, China, and Thailand (Fig. 6.5).

As shown in Table 6.2, nearly 80 % of the adults belonging to the poorest 40 % of the population in Sri Lanka have accounts in financial institutions—more than double the average for South Asia (38.1 %) and significantly higher than the average for the East Asia and Pacific Region (60.9 %). Moreover, the level of financial inclusion is even higher among youth in Sri Lanka, with over 85 % of those aged 15–24 years having accounts with financial institutions. The respective average for South Asia is 36.7 % while that for East Asia and the Pacific is 60.7 %. The table also shows that 83.4 % of the adults living in rural areas in Sri Lanka have accounts at financial institutions—significantly higher than the respective averages for South Asia (43.5 %) and East Asia and the Pacific (64.5 %).

Figure 6.6 shows the share of adults that have borrowed from a financial institution in the past year, 17.9 %, is higher than all other South Asian countries. In Pakistan, the figure is 1.5 %, followed by 3.6 % in Afghanistan.

Table 6.2 Financial inclusion in Sri Lanka: a comparative analysis (2014)

Account (% age 15+)	Sri Lanka	South Asia	East Asia and the Pacific	World
All adults	82.7	46.4	69.0	61.5
Women	83.1	37.4	67.0	58.1
Adults belonging to poorest 40 %	79.8	38.1	60.9	54
Young adults (aged 15–24)	85.2	36.7	60.7	46.3
Adults living in rural areas	83.4	43.5	64.5	56.7

Source: World Bank (2015)

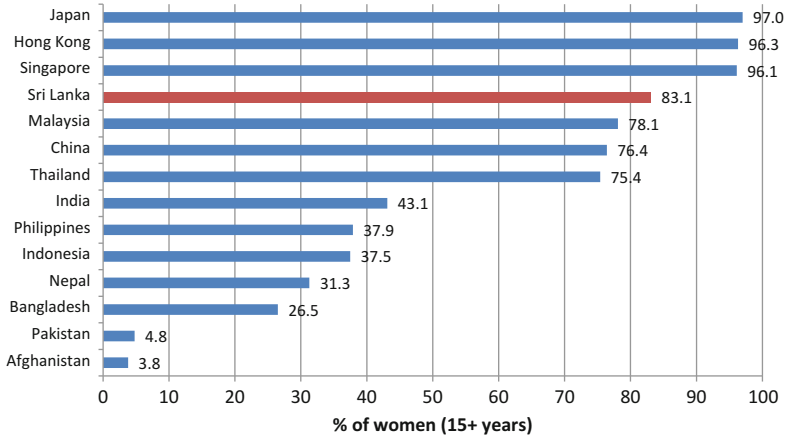

Fig. 6.5 Share of women (15 years and above) with an account at a financial institution (2014).
Source: World Bank (2015), The Little Data Book on Financial Inclusion-15

Financial Inclusion: A Household-Level Analysis

Section 'Financial Sector in Sri Lanka' provided a detailed overview of the financial service providers in Sri Lanka, addressing FFIs and semiformal FIs and their geographic coverage and density. This section provides

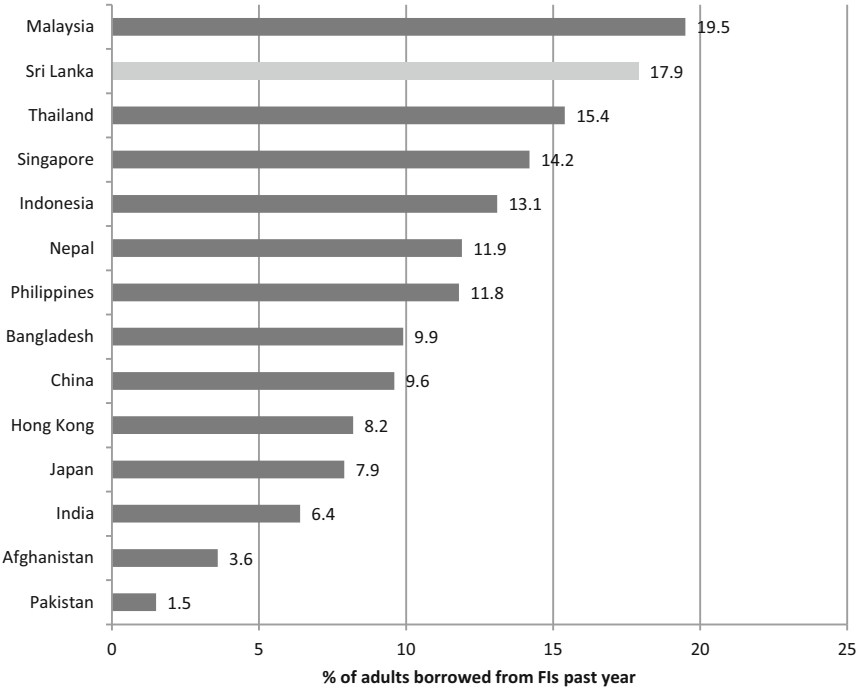

Fig. 6.6 Adults who have borrowed from a financial institution in the past year (2014).
Source: World Bank (2015)

a household-level analysis of access to and usage of financial services. The analysis is primarily based on a two-period household survey covering three districts: Hamabantota (from Southern Province), Kurunegala (North Western Province), and Ratnapura (Sabaragamuwa Province). The survey covered 450 households that were randomly identified from 47 divisions in the 2006/07 and 2009/10 periods.[3]

As shown in Fig. 6.7, around 98 % of the households in the sample had accessed at least one FI, either formal or semiformal, to use loans or savings facilities in 2009/10. In other words, 98 % of the households

[3] The first round of the survey (2006/07) was drawn from a national-level household survey conducted by the Institute of Policy Studies of Sri Lanka under a study on 'Outreach of Financial Services in Sri Lanka', funded by the German Technical Corporation (GTZ)/ProMiS. The second round of the survey was carried out in 2009–2010 by the author. See Tilakaratna (2012) for further details.

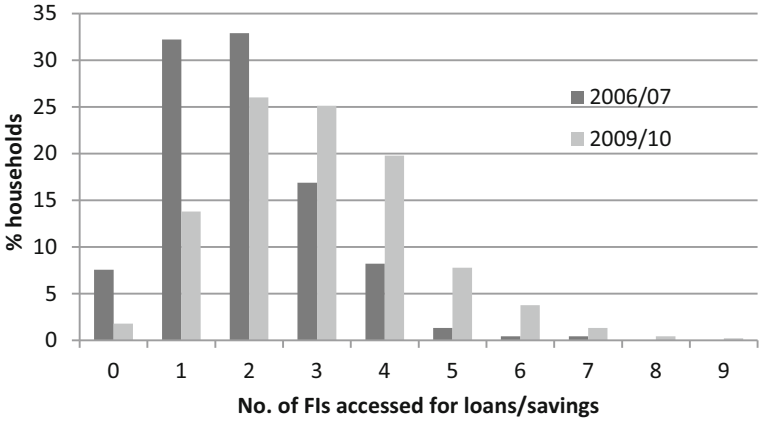

Fig. 6.7 Number of financial institutions accessed by households for loans and/or savings—2006/07 and 2009/10.
Source: Based on the panel household survey (2006/07 and 2009/10)

had savings accounts or outstanding loans with FIs. Fourteen % of the households had accessed only one FI, while most (nearly 85 %) accessed more than one FI for their credit and savings needs. About one third of the households had savings accounts or outstanding loans with four to nine FIs at the time of the survey, with an average household having accessed three FIs in 2009/10. This shows a considerable improvement in financial access from the 2006/07; in 2006/07, nearly 8 % of the households had not accessed FIs, but this reduced to 2 % by 2009/10. Moreover, in 2006/07, only 10 % of the households accessed four or more FIs.

A disaggregated analysis of the FIs accessed for savings and loans separately is shown in Figs. 6.8 and 6.9, respectively. As shown in Fig. 6.8, the share of households that have saved with at least one FI (formal or semiformal) has increased to around 97 % (in 2009/10) from around 87 % in 2006/07, with most of the households (around 75 %) saving in multiple FIs in 2009/10.

Regarding loans, the share of households that borrowed from FIs increased to more than 75 % in 2009/10 (from around 55 % in 2006/07), with nearly 50 % of the households borrowing from multiple FIs. The share of households that borrowed from multiple FIs increased considerably between 2006/07 and 2009/10 (from around 14 %). About 20 % of the households have borrowed from three or more FIs at a time.

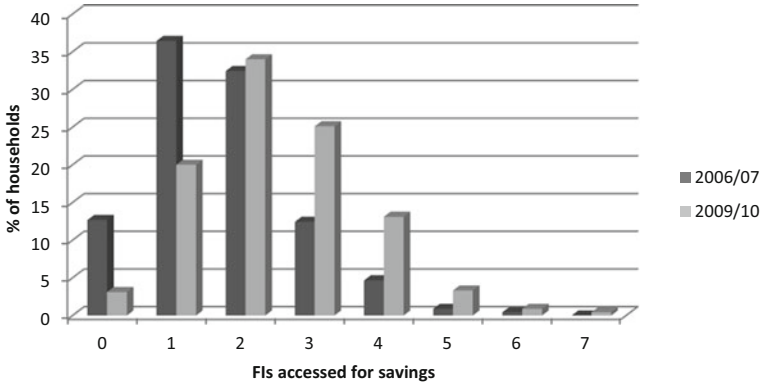

Fig. 6.8 Number of financial institutions accessed by households for savings—2006/07 and 2009/10.
Source: Based on the panel household survey (2006/07 and 2009/10)

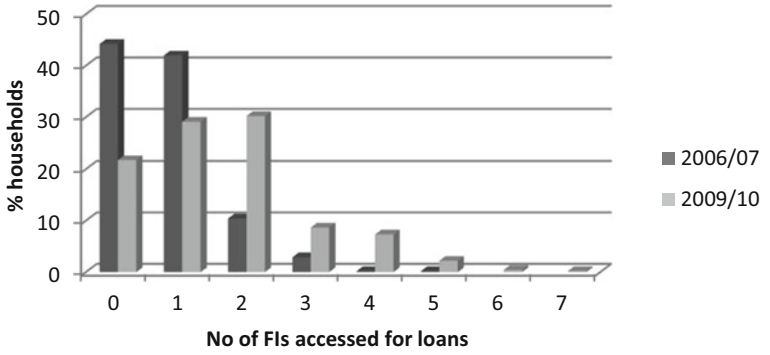

Fig. 6.9 Number of financial institutions accessed by households for loans—2006/07 and 2009/10.
Source: Based on the panel household survey (2006/07 and 2009/10)

It is interesting to observe that while some households have accessed only FFIs like banks, others have accessed only semiformal FIs or MFIs, and still others have accessed a mix of MFIs and formal FIs. As shown in Fig. 6.10, all three categories of households that have saved with multiple FIs increased during 2006/07 to 2009/10 with a notably higher share of

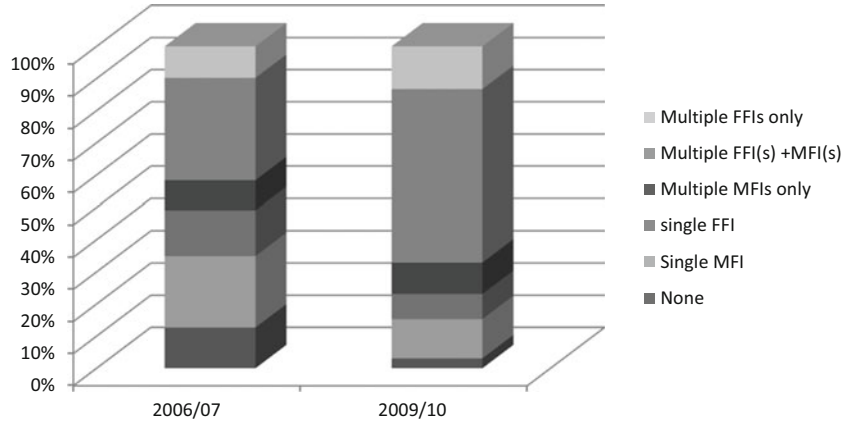

Fig. 6.10 Type of FIs accessed by households for savings—2006/07 and 2009/10. *Source*: Based on the panel household survey (2006/07 and 2009/10); Tilakaratna (2012)

households saving with a mix of MFIs and FFIs. For instance, the share of households that saved with a combination of MFIs and FFIs increased from about 32 % in 2006/07 to 54 % by 2009/10.

Similarly, the share of households that borrowed from both formal FIs and semiformal FIs like MFIs increased to 32 % in 2009/10 from about 7 % in 2006/07 (Fig. 6.11).

The findings indicate a high level of multiple borrowing and multiple savings among households and an overlap between clients of the formal FIs like banks and semiformal FIs/ MFIs. In particular, there is an overlap of households that borrow or save with formal FIs and semiformal FIs like MFIs.

It is important to understand why households borrow from and save with multiple financial institutions. Tilakaratna (2012, 2013) finds four reasons that lead households to borrow from multiple FIs, rather than just one. These include: (1) to build a lump-sum of money by patching together loans from different FIs; (2) to have access to credit more frequently; (3) to access a range of different financial products (e.g. pawning, leasing, cultivation loans, housing loans); and (4) to secure cross financing.

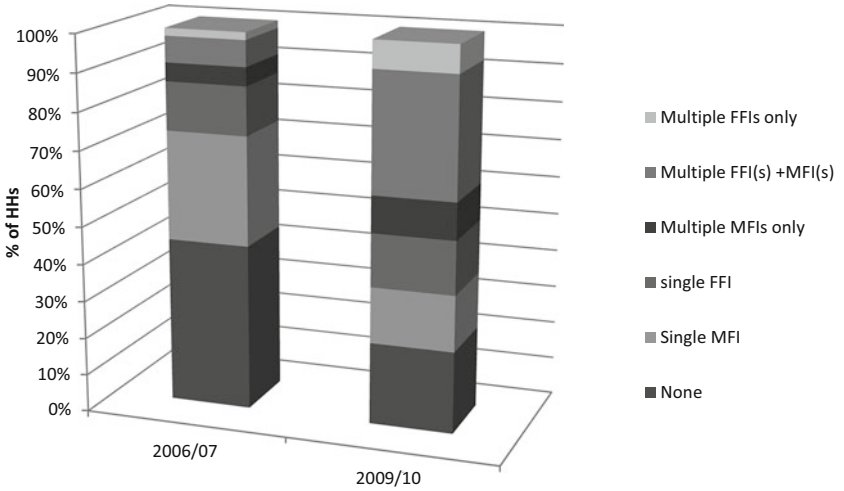

Fig. 6.11 Type of FIs accessed by households for loans—2006/07 and 2009/10. *Source*: Based on the panel household survey (2006/07 and 2009/10); Tilakaratna (2012)

Another reason is the growth of different types of financial institutions, including various MFIs and leasing companies, and the availability of different products (e.g. leasing, pawning) from diverse service providers. 'Aggressive' lending mechanisms and marketing strategies of some FIs have played a role in the increasingly high level of multiple borrowing, and 'greediness' and the 'temptation' to obtain more loans is another contributory factor for the rising level of multiple borrowing in recent years.

With regard to saving, Tilakaratna (2012) finds that multiple savings accounts among many households are driven by a combination of factors. One of the key reasons to have savings with multiple FIs is to have access to loans from multiple FIs, as many FIs either require or prefer that their clients have a savings account before they make loans. Households also seem to save with FIs in small amounts, either regularly or seasonally, with the intention of later using these savings for future or emergency needs. Households may also have multiple savings accounts because they have opened children's savings accounts. Moreover, some households open savings accounts in specific FIs (e.g. commercial banks) to receive salaries or pensions and to obtain

current account services and foreign exchange or remittance facilities that are not available in other FIs. Thus, having savings accounts in multiple FIs is a result of both household choice and the products offered by FIs.

Tilakaratna (2012) further finds reasons for households to borrow from and save with a mix of MFIs and FFIs like regulated banks. Regarding borrowing, one of the key reasons for using FFIs, particularly by lower-income groups, is to access pawning facilities (loans against gold jewellery) that are widely provided by regulated banks and not available from many MFIs (with the exception of some MFIs such as CRBs). Pawning is a common strategy used by low-income households to deal with emergency financial needs. It offers quick access and less documentation, no regular repayment schedules, the possibility of extending the loan period, and confidentiality.

By contrast, no clear pattern is observed about why households save with a mix of MFIs and FFIs. The bulk of savings with MFIs have at least partially been driven by the borrowing needs of the households—either because it is compulsory or preferred by many MFIs that a client opens a savings account before applying for a loan. Many households seem to have a preference for FFIs for children's savings and ordinary savings accounts, which could be attributed to a number of factors such as the safety and reliability of these regulated banks, higher rates of interest, and attractive children's savings account options offered with various incentives such as gifts. Some schools have opened accounts for their students in FFIs, particularly the state banks. By 2014, there were over 3000 special student savings units (operated by regulated banks) in the country to encourage savings among school children. Moreover, FFIs such as commercial banks also offer savings products and services such as current accounts, remittance services and foreign exchange facilities not provided by MFIs (Tilakaratna 2012).

Financial Inclusion in Sri Lanka: Issues and Challenges

Despite the wide range of formal and semiformal financial institutions and a high level of access to loans and savings facilities by households, a number of issues and challenges need to be addressed to improve financial inclusion in Sri Lanka.

1. *Beyond loans and savings: low access to insurance services*

   Although the use of loans and savings facilities of FIs is high among households (as discussed in section 'Financial Inclusion: Where Does Sri Lanka Stand Within the Asian Region?'), the use of insurance services and remittance facilities through institutional sources remains low. As shown in Table 6.3, insurance penetration (total insurance premium as a percentage of GDP) is only 1.2 % in Sri Lanka (with general insurance accounting for 0.7 % and long-term insurance accounting for 0.5 %). Moreover, insurance density (the ratio of premium to total population of the country) is also relatively low, at $33 per capita. These figures indicate a low level of insurance activity in Sri Lanka in comparison to many other Asian countries. For instance, insurance penetration for Asia as a whole is 5.8 % and insurance density is around $314. Countries like Japan and Singapore have a much higher level of insurance penetration and density levels (CBSL 2012).

The low level of insurance penetration in Sri Lanka is largely due to lack of awareness of the benefits of insurance services among the general public, many of whom consider insurance simply a risk management tool rather than an investment vehicle (CBSL 2012).

2. *Weaknesses in the current regulatory framework for the semiformal FIs*

   Currently there is a strong regulatory and supervisory framework for the formal financial sector of the country. Formal FIs like the regulated banks—LCBs and LSBs—as well as LFCs and SLCs are regulated and supervised by the CBSL. The regulation and supervision of insurance firms is carried out by the Insurance Board of Sri Lanka (IBSL) (see Fig. 6.12).

However, the regulation of the semiformal financial sector—including co-operatives like CRBs and TCCSs, various NGOs providing microfinance services, and Samurdhi/Divineguma banks—continues to be weak and rather fragmented with different types of semiformal FIs being regulated by different institutions and acts. The co-operatives are governed by the Co-operative Societies Act of 1972 (amended by the Acts of 1983 and 1992) and regulated by the Department of Co-operative Development. The co-operatives are allowed to accept deposits from their members as well as from nonmembers. The NGOs

Table 6.3 Insurance penetration and density (2011)

	Insurance penetration			Insurance density		
Country	Total business	Long term	General	Total business	Long term	General
Japan	11.0	8.8	2.2	5169	4138	1031
Singapore	5.9	4.3	1.5	3106	2296	810
India	4.1	3.4	0.7	59	49	10
Malaysia	5.1	3.3	1.8	502	328	175
Thailand	4.4	2.7	1.7	222	134	88
PR China	3.0	1.8	1.2	163	99	64
Philippines	1.3	0.8	0.4	30	20	10
Sri Lanka	**1.2**	**0.5**	**0.7**	**33**	**15**	**18**
Indonesia	1.7	1.1	0.6	60	40	20
Pakistan	0.7	0.4	0.3	8	4	4
Europe	7.1	4.1	3.0	1886	1083	802
Asia	**5.8**	**4.3**	**1.6**	**314**	**229**	**85**
Africa	3.6	2.5	1.2	65	44	21
World	6.6	3.8	2.8	661	378	283

Source: CBSL (2012); Primary source: Swiss Re, Sigma No. 3/2012, World Insurance 2011

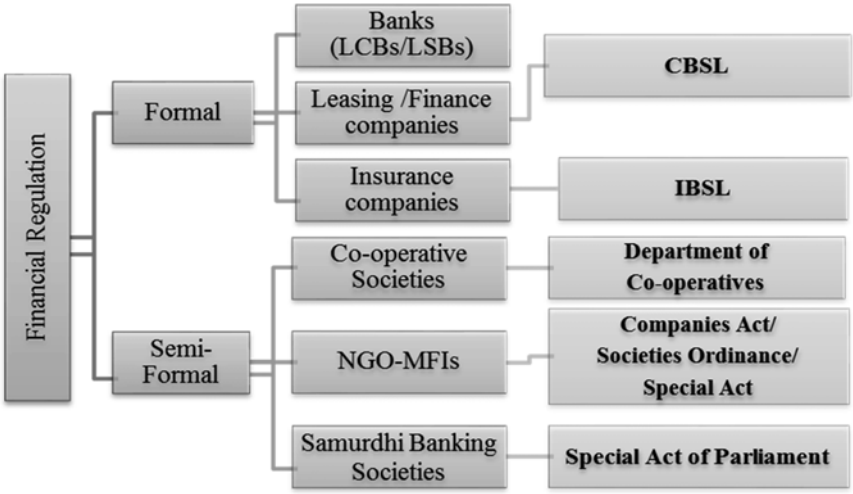

Fig. 6.12 Regulation of financial institutions in Sri Lanka. *CBSL* Central Bank of Sri Lanka; *IBSL* Insurance Board of Sri Lanka.
Source: Kelegama and Tilakaratna (2014)

involved in microfinance provision at present can be registered under one of three acts: (1) the Companies Act No. 7 of 2007; (2) the Societies Ordinance of 1891 (as amended by Act Nos. 17 of 1926, 14 of 1932, 55 of 1949, 16 of 1981, and 11 of 2005); or (3) a Special Act of Parliament. Registering under the Societies Ordinance is the simplest method of establishment and hence most of the smaller NGOs are registered under this Ordinance. NGO-MFIs are, by law, not permitted to accept deposits from their members or nonmembers. The state-owned microfinance program Samurdhi/Divineguma banks are governed by a special Act of parliament and are allowed to mobilize savings from members as well as nonmembers residing within the operational area (Kelegama and Tilakaratna 2014; Tilakaratna 2012).

The absence of a single regulatory and supervisory body is a major challenge facing Sri Lanka's microfinance sector at present. The lack of regulation also has restricted some MFIs from mobilizing savings from their members. It has also been a barrier for some institutions to attract external funds, restricting their financial operations. Under the proposed Microfinance Act (which is still in its draft form), it has been mentioned that all the licensed and registered MFIs will be permitted to accept deposits from the public. This is expected to have a significant positive effect on Sri Lanka's microfinance sector (Tilakaratna and Hulme 2015; Kelegama and Tilakaratna 2014; Tilakaratna 2012).

3. *Low usage of digital financial services*

Despite the high level of access to bank accounts among Sri Lankan adults, the use of digital financial services such as mobile banking, ATM services, debit and credit cards, and internet banking remains low. As shown in Table 6.4, only 0.1 % of adults have mobile accounts while only 1.6 % used the internet to pay bills or make purchases. Moreover, only 10.4 % have used a debit card to make a payment during the past year while only 2.8 % have used a credit card. The percentage of adults with debit cards, however, has increased in recent years from around 10 % in 2011 to around 25 % by 2014. The share of adults with bank accounts who use ATMs as their main mode to withdraw cash is about 23 % in Sri Lanka. Although this share has increased in recent years (from 15.4 % in 2011), it remains lower than the respective average for South Asia (31.1 %) and East Asia and the Pacific (53.3 %).

Table 6.4 Use of digital financial services in Sri Lanka (2014)

Indicator	Sri Lanka	South Asia	EAP	World	Lower Middle-Income
Mobile account (% aged 15+)	0.1	2.6	0.4	2.0	2.5
Had a debit card (2014)	24.9	18.0	42.9	40.1	21.2
Had a debit card (2011)	10.0	7.2	34.7	30.5	10.1
ATM is the main mode of withdrawal (% with an account) (2014)	23.3	31.1	53.3	NA	42.4
ATM is the main mode of withdrawal (2011)	15.4	16.9	37.0	48.3	28.1
Used a debit card to make a payment past year (2014)	10.4	8.5	14.8	23.2	9.6
Used a credit card to make a payment past year (2014)	2.8	2.6	10.8	15.1	2.8
Used internet to pay bills or make purchases (2014)	1.6	1.2	15.6	16.6	2.6

Source: World Bank (2015)
Note: NA= data not available

Relatively low use of digital financial services in Sri Lanka can be attributed to a number of factors. Lack of knowledge or awareness of digital products and services, poor knowledge of information technology (IT) particularly among the older population, lack of confidence on digital services, a preference to visit the bank and get the required services with the help of a bank officer, and the relatively high density of FIs in Sri Lanka are some of the key reasons.

4. *Rising debt levels among households*

While Sri Lanka does have a high level of access to financial institutions among households for loans and savings (as discussed in section 'Financial Inclusion: A Household-Level Analysis'), some studies have shown rising debt levels among households. Tilakaratna (2012) found an increase in debt levels among households between 2006/07 and 2009/10, with higher levels of debt among households borrowing from multiple FIs. The study further finds that the increase in debt levels has been particularly higher among the long-term multiple borrowers (i.e. those who have been borrowing from multiple FIs for a long period of time). For instance, the mean debt-income ratio of long-term borrowers increased from 0.136 (in 2006/07) to 0.175 (in 2009/10), a nearly 30 % increase between the two periods. However, the

study found moderate levels of debt for the majority of the households. Similarly, Tilakaratna and Hulme (2015) find an increase in debt levels among MFI borrowers, although on average debt levels remain modest.

There is also evidence of increasing debt to finance and leasing companies among households, particularly among households from low-income groups and those from rural areas (Tilakaratna and Herath 2015).

Other concerns include constraints that small and medium-size enterprises face in accessing finance, lack of a credit information sharing mechanism for the microfinance sector, and issues related to the quality of financial services and products.

Conclusions

There is a wide network of formal and semiformal financial institutions in Sri Lanka including commercial and development banks, leasing and finance companies, co-operatives, and other MFIs that provide a variety of financial services and products to various segments of the population. At present, a large share of the country's adult population has access to financial institutions, much higher than that of many other countries in the South Asian region. While many households use multiple FIs for their credit and savings needs, most use a mix of FFIs like banks and MFIs.

Despite the high level of access to financial institutions by individuals and households across all income groups, there is much scope for improvement in order to achieve a greater level of financial inclusion in the country. In particular, measures are needed to improve access to financial services beyond credit and savings, including insurance, remittances, and digital financial services/products; to strengthen the regulation of the microfinance sector and to share credit information among MFIs; and to improve the quality of financial services received by all segments of the population.

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7

Microfinance and Financial Inclusion in India

Rajesh Chakrabarti and Kaushiki Sanyal

Introduction

Access to financial services such as credit, savings, insurance, and remittance facilities is a necessity for the poor at least as much as it is for the affluent and the middle class. Research has shown that even households with incomes of less than a dollar a day per person rarely consumed every penny as soon as it was earned. Instead, they sought to "manage" their money by saving when they could and borrowing when they needed to. Since financial institutions in the formal sector were reluctant to lend to people in the low-income group, the microcredit industry stepped into fill the gap (Collins et al. 2009; Morduch 1999).

Efforts to deliver affordable credit to poor borrowers have a long history. For example, the usury laws and Islamic prohibition on interest were aimed at this goal. There have also been many attempts to set up

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institutions for directly supplying credit to the poor.[1] That said, modern microcredit, as an institutional mechanism for improving credit access for the poor, is unprecedented in its scale and visibility. In 2012, according to the Microcredit Summit, there were 204 million microcredit borrowers worldwide.[2] This expansion has been due to a combination of lower interest rates and a willingness to lend to people who have no previous connections to the formal financial system (Banerjee and Duflo 2011).

Most poor people borrow either from friends, neighbours, or from a professional moneylender if access to institutional sources of credit is not available. However, moneylender credit is expensive, although the data on this tends to be patchy and not necessarily representative. Robinson (2001) and Banerjee (2004) have found that moneylender interest rates go from 4 % per month (60 % annual, 50 % or so real) to simply astronomical rates such as 5 % per day and above. In countries where microcredit has had the greatest success, such as Bangladesh, Bolivia, India, and Indonesia, interest rates are significantly lower than 30 % per year. Few studies collect both moneylender interest rates and microcredit interest rates paid by the same households, but those that do find large differences: 3.8 % per month (nearly 60 % per year) charged by moneylenders versus 24 % yearly rates for microfinance institutions (MFIs) in urban Hyderabad, India (Banerjee 2013), and 103 % for moneylenders versus less than 30 % for MFIs in 156 Bangladesh villages (Mallick 2012; Banerjee 2013).

India was one of the developing economies where the microfinance industry took off in a big way. The prevailing wisdom in the development community was that by providing microcredit to the "poorest of the poor", the gap in the formal rural credit sector could be filled. However, in 2010, a spate of suicides in Andhra Pradesh's rural areas was blamed, rightly or wrongly, on certain unsavoury practices of the microfinance industry. Overnight, microfinance, especially those who were for-profit and looked to the market for funding, became villains in the eyes of the public. This gave the state government an opportunity to clamp down on the industry, through imposing restrictive rules on the industry through an ordinance, leading to a drop in the activities of the industry. Since then, the situation has improved with the industry slowly limping back, and the new regulatory

[1] http://www.globalenvision.org/library/4/1051.

[2] http://stateofthecampaign.org/2014-report-executive-summary.

framework put in place by the Reserve Bank of India (RBI) providing some much needed clarity to the regulatory landscape of microfinance.

In this chapter, we provide an overview of the microfinance movement in India, and underline its role in the broader financial inclusion challenge in the country. The chapter is divided into three parts. The next section provides an overview of the present scale and distribution of the microfinance industry in India. It attempts to take stock of the contribution and present status of microfinance within the broader policy goals of financial inclusion. Section 'Microfinance in India: A Brief History' sketches the broad history of the movement; from its roots in the pre-1970s to its meteoric rise in the 1990s, which hit a roadblock with the crisis in Andhra Pradesh in 2009, and the changes in the industry since the crisis. Its progression is divided into five phases: 1950–1970; 1970–1990; 1990–2010; the Andhra Pradesh crisis; and the postcrisis phase. The concluding section briefly analyses the key forces and determinants of the microfinance movement in India and provides lessons that other countries can derive from it.

Microfinance in India Today: A Snapshot

With a market size well in excess Rs. 50 thousand crores, India is one of the largest microfinance markets in the world. Figure 7.1 shows the volumes and growth figures of the Indian microfinance market broken down by its two dominant and distinct models, the Bank-Self-Help Group (SHG) model and the MFI model.

Three things are apparent from Fig. 7.1: first, during 2008–2013, the overall market witnessed a steady rise of about two and half times; second, much of this steady and impressive growth came from its dominant component—the SHG-Bank Linkage (SBLP) model; and third, the MFI model, underwent a massive swing in growth rates exceeding 160 % before being hit by the infamous Andhra Crisis, which actually halted its growth in its aftermath, but has now begun to show respectable growth. The crisis notwithstanding, the share of the MFI model has grown from about 10 % in 2008 to 25 % in 2013.

Table 7.1, using the MIX Market data, supplements the foregoing statistics with some figures on the number of borrowers and the gross loan

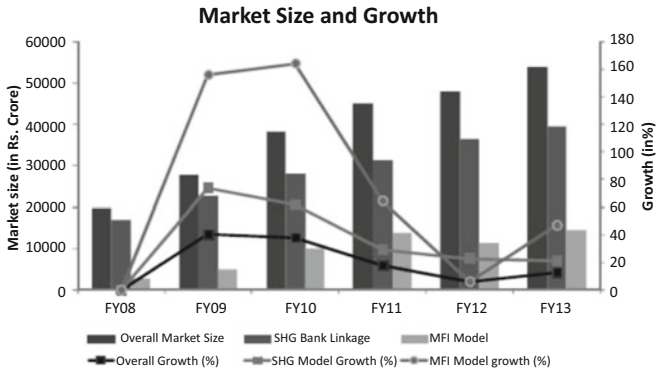

Fig. 7.1 Market size and growth.
Source: CARE Ratings (2014)

Table 7.1 Performance of MFIs in India

Year	MFIs	No. of Active Borrowers	Gross Loan Portfolio (in US$)
2006	106	7,327,960	773,298,527
2007	80	10,214,367	1,391,772,725
2008	98	16,747,173	2,239,946,498
2009	120	27,654,027	4,615,944,783
2010	127	32,618,491	5,379,559,879
2011	122	26,589,600	4,313,910,884
2012	98	27,792,571	4,523,432,969
2013	88	32,545,085	5,471,886,863

Source: Mix Market (data on India), http://www.mixmarket.org/profiles-reports/crossmarket-analysis-report?rid=Mhg4QACn

portfolio for MFIs. A seven-year (2006–2013) period reflects a rise in active MFI borrowers from 7.3 million to 32.5 million, roughly four-and-a-half fold rise, while the loan portfolio has climbed from US$0.8 billion to US$5.4 billion, nearly a seven-fold increase. Over the same period, the number of MFIs covered in the MIX data has shrunk from 106 to 88 after reaching a peak of 127, reflecting consolidation during the period. Table 7.2 shows the growth of the SHG sector after the crisis.

The skewed regional distribution of the MFI loans in India is an equally important and interesting subject. Hyderabad remains the capital of microfinance in India, though its relative stature has been diminished

Table 7.2 Growth trends in SHG-bank linkage programme

Particulars	2010	2011	2012	2013	2014
No. of SHGs with outstanding bank loans	4,851,356	4,786,763	4,354,442	4,551,434	4,197,338
Loans disbursed to SHGs during the year (Rs. billion)	144.53	145.48	165.35	205.85	240.17
Average loan disbursed during the year per SHG	91,081	121,625	144,048	168,754	175,768
Total bank loans outstanding to SHGs (Rs. billion)	280.38	312.21	363.41	393.75	429.27
No. of SHGs with savings accounts with banks (million)	6.95	7.46	7.96	7.32	7.42
Total savings of SHGs with banks (Rs. billion)	61.99	70.16	65.51	82.17	98.97
Average savings of SHGs with banks (Rs)	8915	9402	8230	11,229	13,321

Source: Status of Microfinance in India 2013–2014, NABARD; Inclusive Finance India Report 2014, Tara Nair, Ajay Tankha, ACCESS 2015

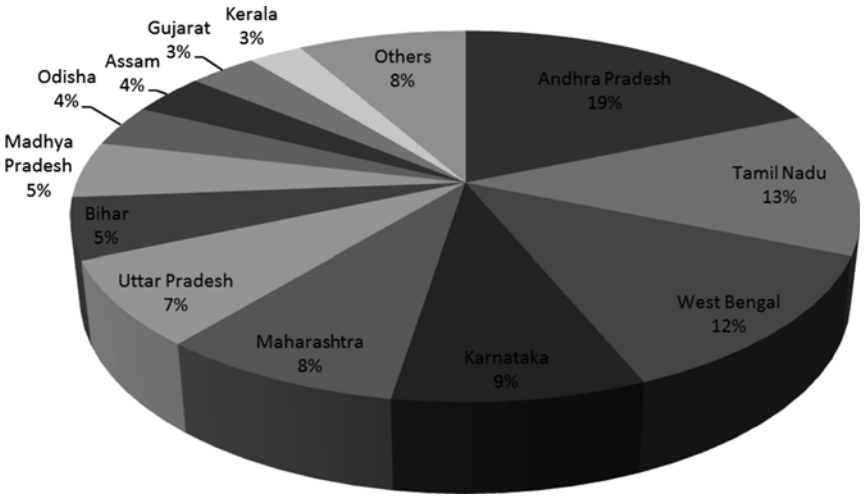

Fig. 7.2 Distribution of outstanding MFI loans

by the Andhra Pradesh crisis. As Fig. 7.2, shows, the top 11 states in the country account for about 92 % of MFI lending with the three southern states and West Bengal accounting for more than 50 % of the MFI loans.

A similar, if not even more extreme, picture emerges on the distributional nature of the other approach, the SBLP model. Figure 7.3 shows the regional distribution of bank loans in 2013–2014 and is indicative of this model being dominated by the southern states.

How sustainable is this skewed distribution? Figure 7.4 presents the penetration statistics of the SBLP model, capturing information on the coverage of savings-linked SHGs as a fraction of potential SHGs. It is apparent, the southern districts are now, without exception, 80 % plus linked; whereas districts in the far poorer Uttar Pradesh, Uttarakhand, and Bihar states in the north and northeast, have below 50 % linkage and appear to pose stronger growth opportunities.

What does the future portend for the microfinance sector in India relative to the rest of world? Estimation provided by the Swiss research

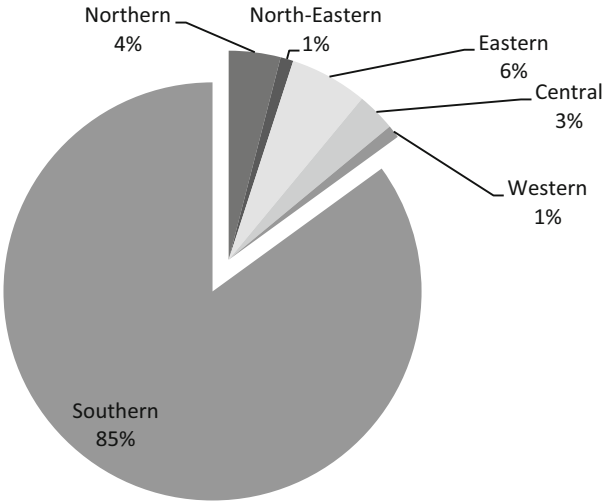

Fig. 7.3 Bank loans disbursed in 2013–2014 region-wise (SBLP).
Source: Status of Microfinance in India 2013–2014, NABARD

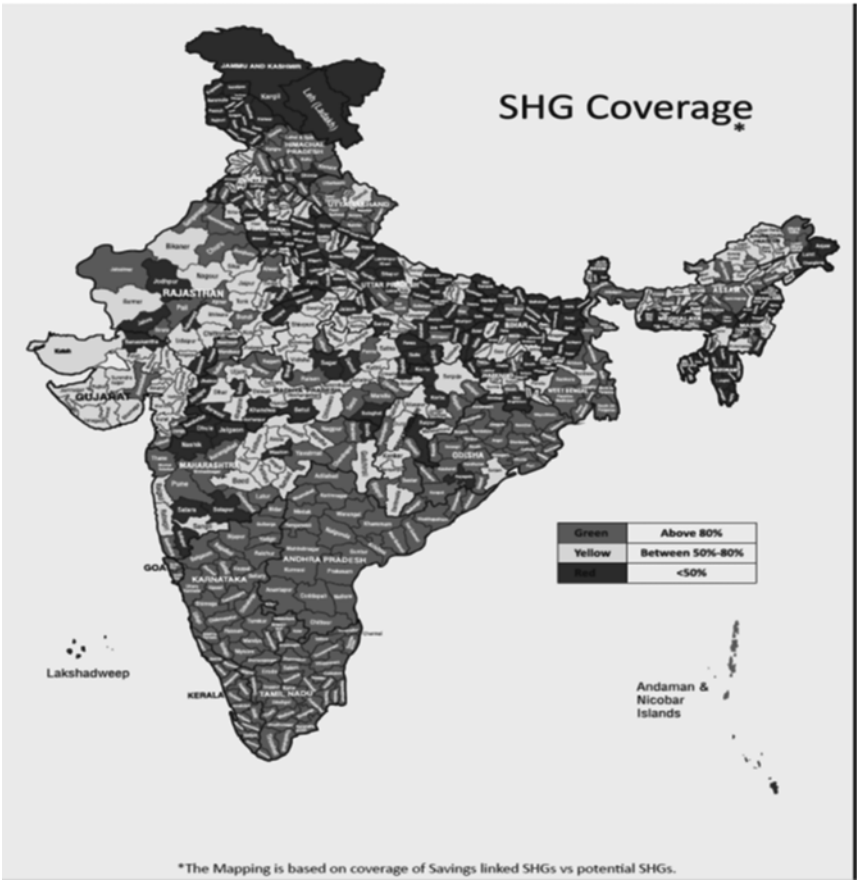

Fig. 7.4 SHG coverage in India.
Source: Status of Microfinance in India 2013–2014, NABARD

firm, responsAbility (see Fig. 7.5) puts the microfinance growth outlook for India, China, and a few Southeast Asian countries in the 25–35 % range, the highest in the world. So it does seem the high growth in Indian microfinance is here to stay, at least in the short run.

The next section attempts a brief sketch of the evolution of the Indian microfinance sector over the decades.

Fig. 7.5 Microfinance growth outlook for 2014 by region (year on year growth in gross loan portfolio)
Source: responsAbility Research Department

Microfinance in India: A Brief History

The evolution timeline of microfinance in India consists of five major phases: the background of the financial inclusion agenda since independence until the 1970s; the early but muted developments of microfinance from 1970 to 1990; the rapid growth phase from 1990 to 2010; the Andhra Pradesh crisis of 2010; and the recovery.

1950–1970 (Background)

Although India's relationship with microcredit began in the 1970s, the need to provide the poor with access to credit was brought home shortly after independence in 1947, when the first survey of rural indebtedness (All India Rural Credit Survey) prepared by the RBI documented that moneylenders and other informal lenders met more than 90 % of rural credit needs. The share of banks in particular was only about 1 % of total rural household debt (Basu and Srivastava 2005).

This survey highlighted the major problems with respect to providing credit to poor households: first, the inadequate supply of formal sector credit; second, high interest rates of informal sector loans; and third, the creation of an elaborate structure of coercion through terms and conditions attached to these informal sector loans.

Given the issues involved, the declared public policy objectives regarding rural credit in the postindependence period were, in the words of the RBI Governor, "to ensure that sufficient and timely credit, at reasonable rates of interest, is made available to as large a segment of the rural population as possible" (Rangarajan 1996).

To this end, between the 1950s and 1970s, India as well as the governments of most developing countries focused on providing agricultural credit to small and marginal farmers through state-owned development finance institutions, or farmers' cooperatives in some cases, that received concessional loans and on-lent to customers at below-market interest rates. While the share of banks in total rural household debt increased only slightly to 2.4 % in 1971, the share of formal sources of credit in rural areas increased to 29 % due to the rising share of cooperatives (Basu and Srivastava 2005).

In 1969, India nationalised 14 major commercial banks, the policy was known as "social and development banking," to extend banking services to unbanked rural areas, provide credit for specific activities and to certain disadvantaged groups. Targets were set for the expansion of rural branches, ceilings on interest rates were imposed, and guidelines were set for the sectorial allocation of credit. Specifically, a target of 40 % of advances for the priority sectors, namely agriculture and allied activities and small scale and cottage industries, was set for commercial banks (Ramachandran and Swaminathan 2001).

1970–1990 (Genesis)

From the late 1970s to 1980s, the two major policy instruments for tackling poverty were developed: first, loans-cum-subsidy schemes targeted at the rural poor; and second, state-sponsored rural employment schemes. The most important scheme of this phase was the Integrated Rural Development Programme (IRDP), a scheme for the creation of productive

income-bearing assets among the poor through the allocation of subsidised credit.[3] Initiated as a pilot project in 1978–1979, it was extended to all rural blocks of the country in 1980 (Planning Commission, Government of India 1985). This period also involved an expansion and consolidation of the institutional infrastructure for rural banking especially through the introduction of Regional Rural Banks (RRBs) in 1972, which specialised in social and development banking in rural areas. These governmental initiatives did increase access to credit to rural areas[4] but were biased with respect to regions, crops, and classes (Basu and Srivastava 2005).

However, rural development banks suffered massive erosion of their capital base due to subsidised lending rates, poor repayment discipline, and the funds did not always reach the poor and often ended up concentrated in the hands of better-off farmers (World Bank 2002). In addition, there was an increase in Non-Performing Assets (NPA) of banks. IRDP also failed to create long-term income-bearing assets for a variety of reasons (PEO Study 1985). The design of IRDP included substantial subsidies, 25–50 % of each family's project cost, and this resulted in extensive malpractice and misuse of funds. Thus, the IRDP loans were viewed as a politically motivated hand-out, and the bankers largely failed to follow up with borrowers. The net result was that estimates of the repayment rates in the IRDP ranged from 25 to 33 %. Not surprisingly, the two decades experience with the IRDP, in the 1980s and 1990s, affected the credibility of microborrowers in the view of bankers, and ultimately, hindered access for the less literate poor to banking services (Sinha 2003). Similarly, the entire network of primary cooperatives in the country and the RRBs proved to be a colossal failure. Saddled with the burden of directed credit and a restrictive interest rate regime, the financial position of the RRBs deteriorated quickly, while the cooperatives suffered from

[3] IRDP covered small and marginal farmers, agricultural workers, landless labourers, rural craftsmen and artisans and virtually all the families of about five persons with an annual income level below Rs 3500. The main aim was to raise the levels of the BPL families in the rural areas above the poverty line on a lasting basis by giving them income generating assets and access to credit and other inputs. The implementation was to be done by the District Rural Development Agency with the assistance from block level machinery.

[4] Following bank nationalisation, the share of banks in rural household debt increased to about 29 % in 1981 while the share of formal or institutional sources in total debt reached 61.2 % until 1991.

the malaise of mismanagement, privileged leadership, and corruption born of excessive state patronage and protection (Sinha 2003).[5]

Meanwhile, beginning in the 1970s, innovative strategies were developed in many countries to extend financial services to the poor. The Grameen Bank in Bangladesh and BancoSol in Bolivia led the way for group liability lending, an extension of small loans to groups of poor women to invest in microbusinesses. These "microenterprise lending" programmes had an almost exclusive focus on credit for income generating activities, in some cases accompanied by forced savings schemes, targeting very poor, often women, borrowers (Morduch 1999). Other pioneers in unconventional lending included Bank Rakyat and Kredit Desa in Indonesia, Foundation for International Community Assistance (FINCA) in Latin America, India's Self-Employed Women's Association (SEWA) of India, Sahakari Bank in Ahmedabad, Annapurna Mahila Mandal in Mumbai, and Working Women's Forum (WWF) in Chennai.

Bank Rakyat Indonesia[6] (BRI), which began its operations in 1895 and acquired its present form in 1968, gives loans to low-income households through their *unit desa* programme, which was started in 1969 to provide subsidised credit and later reorganised into commercial microbanking (Robinson 2002). BRI did not follow the group lending method, and unlike most other similar programmes required its borrowers to put up collateral. It also charged commercial interest rates and started mobilising rural savings through *unit desas*, both to meet demand for savings services and to ensure that no government funding was required in the future. But operations remained small scale and "collateral" was often defined loosely and could include lesser certificates and land tax bills, allowing staff some discretion to increase loan size for reliable borrowers who might not be able to fully back the loans with assets. The bank centred on achieving cost reductions by setting up a

[5] Since 1990, the need for co-operative reforms was articulated by many committees that were headed by Chaudhry BrahmPerkash, JagdishCapoor, VikhePatil, and V. S. Vyas. The basic problem identified by these committees was that most co-operative societies lacked autonomy due to direct intrusion of the state in the governance and management of co-operative societies. The reason was that the co-operative movement in India was initiated by the government. In 1954, the All India Rural Credit Survey Committee Report not only recommended state partnership in terms of equity, but also partnership in terms of governance and management.

[6] See BRI website for more information (http://www.bri.co.id/articles/9).

network of branches and posts with an average of five staff members each. Loan officers got to know clients over time, starting borrowers off with small loans and increasing loan size conditional on repayment performance. The programme has proved to be profitable with high repayment rates, which often performed better than corporate clients in other parts of the bank (Morduch 1999; Robinson 2002).

FINCA, under John Hatch and his associates, started a network of village banks in the mid-1980s in Latin America. Non-governmental groups (NGOs) such as CARE, Catholic Relief Service, and Freedom From Hunger helped set up village financial institutions in partnership with local groups, allowing substantial local autonomy over loan decisions and management. In the standard model, the sponsoring agency makes an initial loan to the village bank and its 30–50 members. Loans are then made to members, starting at around $50 with a four-month term, with subsequent loan sizes tied to the amount that members have on deposit with the bank. Like Indonesia, the village banks successfully harnessed local information and peer pressure without using small groups along BancoSol or Grameen Bank lines. However, this model is difficult to scale, so the focus has been on outreach (Morduch 1999).

In India, Self Employed Women's Association (SEWA), Working Women's Forum (WWF), and Annapurna Mahila Mandal developed innovative strategies to tailor banking to the needs of economically weaker working women. The most well-known and successful of these initiatives was the SEWA Bank, undertaken by Elaben R. Bhatt, a lawyer and trade unionist. SEWA was established in Ahmedabad in December 1971, and registered as a trade union in April 1972. In 1974, 4000 self-employed women established the SEWA Bank[7] as a cooperative bank with the specific objective to provide credit to self-employed women to empower them and reduce their dependence on money sharks. Between 1974 and 1977, the SEWA Bank concentrated on attracting deposits from self-employed women and served as an intermediary to enable depositors to obtain loans from nationalised banks, which are required to lend to the poor. During this period, about 6000 members received nearly Rs 2,500,000 in credit. Initially, the nationalised banks charged 9–16 %

[7] For more information, see website of SEWA Bank: http://www.sewabank.com.

interest, but they reduced the rate to 4 % as a result of SEWA's lobbying with the government. In 1976, the SEWA Bank started to extend loans to its depositors from its own funds and gradually withdrew from the credit arrangement with the nationalised banks. SEWA Bank offers a range of services such as savings, loans, fixed deposits, and pensions to poor women but does not operate any group lending schemes in its urban operations. Loans can be secured based on physical collateral (jewellery, savings account), can be unsecured (requires a guarantor as 'social collateral'), and range in size between Rs 5000 and Rs 50,000. It has become a viable financial venture (Rose 1992; Duvendack 2010).

Around the mid-1980s, the first steps towards setting up SHGs was taken by Mysore Resettlement and Development Agency (MYRADA), and it built upon rural chit funds and informal lending networks with the goal of it evolving into a credit management group. Many of them had emerged from the breakdown of the large cooperatives organized by MYRADA. Members came in groups of 15–20 asking MYRADA to revive the credit system. When reminded of the loans they had taken out from the cooperative, they offered to return them to MYRADA, but not to the cooperative, which in their experience had been dominated by a few individuals. MYRADA staff suggested that they return the money to themselves, in other words to the members who had come in a group to present their case to MYRADA. After some hesitation, they decided to continue meeting in these smaller groups. MYRADA staff realised that they would need training: how to organise a meeting, set an agenda, keep minutes, and so on. Efforts were made to train the members systematically. On analysis, it emerged that the members were linked together by a degree of affinity based on relationships of trust and support; they were also often homogeneous in terms of income or occupation, for example, agricultural labourers, but not always (Pulley 1989; Adams and von Pischke 1991).

The government, in the meantime, decided to set up a new organisation that would focus solely on the credit issue in rural areas. The National Bank for Agriculture and Rural Development (NABARD) was set up in 1982, and it took up the credit functions of RBI and the refinance function of the then-Agricultural Refinance and Development Corporation.

National Bank for Agricultural and Rural Development (NABARD) and MYRADA joined hands to connect the SHGs with banks. A survey

of 43 NGOs in 11 states was conducted by NABARD between 1988 and 1989 to study the functioning of SHGs, and the possibilities of collaboration between banks and SHGs. The results were encouraging. Consequently in 1992, MYRADA and NABARD together trained and expanded the savings groups, linking them to banks, and fostering the foundation of the SHG Bank Linkage Programme (SBLP). Other NGOs such as PRADAN and Development of Humane Action (DHAN), largely funded by NABARD, also pioneered the SHG model (Pulley 1989; Adams and von Pischke 1991).

1990–2010 (The Take-Off)

The 1990s was the turning point in India's economic history characterised by the liberalisation of the economy. The policy objectives of this phase were encapsulated in the Report of the Committee on the Financial System chaired by M. Narasimham. The report called for "a vibrant and competitive financial system…to sustain the ongoing reform in the structural aspects of the real economy" (RBI 1991). The Committee said that redistributive objectives "should use the instrumentality of the fiscal rather than the credit system" and accordingly proposed that "directed credit programmes should be phased out." It also recommended that interest rates be deregulated, that capital adequacy norms be changed to "compete with banks globally", that branch licensing policy be revoked, that a new institutional structure that is "market driven and based on profitability" be created, and that the part played by private Indian and foreign banks be enlarged. The reforms, following these recommendations, removed some of the constraints on the functioning of RRBs, easing their interest ceiling and allowing them to invest in the money market. The financial situation of the RRBs has improved since with declining losses, and now over 80 % of the RRBs are profitable. However, much of this turnaround has resulted from a shift to investment in government bonds that have gained with falling interest rates and loans to the non-poor in rural areas. The focus on financial sustainability has cost outreach dearly. Recent years have witnessed, perhaps predictably, a sharp decline in the share of rural and small loans in bank portfolios. The locational distribution of bank branches has also undergone a considerable shift away from the rural areas. The lending

portfolio of scheduled commercial banks also reflects this shift away from rural areas (Chakrabarti and Ravi 2011).

This shift in policy created a vacuum of credit in rural India, which was partly filled by microfinance. Microfinance served as a means for financial inclusion because regular banks tended not to lend to the poor because of the high cost per individual loan and lack of collateral. In 1992, the NABARD sponsored the SBLP operations (Government of India 2008). Under SBLP, SHGs needed to save regularly for a minimum of six months, and maintain prescribed records and accounts to become eligible to be linked to local banks. Currently, this programme provides credit to over 73 lakh SHGs.[8]

The rapid rise of microfinance, to be precise, loans disbursed by specialised MFIs, in India began in the late 1990s, continuing the tradition of credit as a social policy. The liberalisation of India's economy and financial sector after 1991 provided the impetus for the government to allow private players to enter the sector to provide microfinance products and services. These private microfinance service providers were called MFIs and included NGOs, co-operative societies, and Non-Banking Financial Companys (NBFCs). This diverse set of MFIs provided a range of microfinance products and services using different delivery models. Microfinance gradually evolved into an industry with diverse market players, low competition, a huge clientele, excellent long-term growth prospects, and no regulation.

The model of their operation was as follows: commercial banks or apex institutions [NABARD, Small Industries Development Bank of India (SIDBI), Rashtriya Mahila Kosh] would lend to MFIs[9] for further lending to groups or individuals (Sanyal 2007).

The microfinance sector in India, as in most places in the world, originated out of private initiatives typically of not-for-profits, and thrived for a long while without direct government supervision, with one exception—the NABARD promoted SBLP. Until 1999, most of the MFIs were NGOs funded through grants and soft loans, and also adopted the Grameen model of group-based lending to women in rural areas. About 800–1000 NGOs were involved in mobilising savings and providing

[8] https://www.nabard.org/english/shgs.aspx.

[9] Private bodies based on the Grameen model of Bangladesh.

microloans to the poor (Sinha 2003). Initially funded through donor support in the form of revolving funds and operating grants, these NGOs later started getting bulk loans from NABARD, Small Industries Development Bank of India (SIDBI), and RMK. However, the outreach was still small as compared to the need, about 10 % of the 60 million poor families (Sinha 2003). This changed as some of the NGO-MFIs started growing and transforming into for-profit NBFCs, namely Spandana, SHARE Microfin, BASIX India, and SKS Microfinance. The sector also attracted professionals who set up for-profit NBFCs to provide financial services to people at the 'bottom of the pyramid'. To scale up, these NGO-MFIs needed to access capital, which was easier if they became a corporate entity regulated by the RBI. By 2010, there were 5 to 10 large and mid-sized NBFC-MFIs, which had transformed from NGO-MFI, and five to ten NBFC-MFIs promoted by professionals. There were also 800 NGO-MFIs operating in the sector but their outreach and loan portfolios were much smaller (Nasir 2013; Chakravarty and Padmapriya 2005).

Box 7.1: Experience of a Few Select MFIs

BASIX

One of the earlier MFI entrants, BASIX, was founded in 1996 in Hyderabad, Telangana. It started with the mission of establishing a link between the economically more prosperous world and the poor but the vibrant and talented part of the world. Basix was the brand identity of five closely integrated companies with the motto "Equity for Equity". Four of these five firms were for-profit firms. The five firms were as follows:

- Bhartiya Samruddhi Investments and Consulting Services Ltd. (BASICS Ltd)
- Indian Grameen Services
- Bhartiya Samruddhi Finance Ltd. (Samruddhi)
- Krishna Bhima Samruddhi Local Area Bank Ltd. (KBSLAB)
- Sarvodaya Nano Finance Ltd. (Sarvodaya)

(*continued*)

Box 7.1 (continued)

In August 1996, RBI came up with the concept of Local Area Banks (LABs) in an effort to reduce the demand supply gap of financial services in rural areas. This was created keeping in mind that the institutional framework had to be strengthened, too. BASIX was among the first few to be granted a license for opening a LAB. BASIX promoted the KBSLAB—Krishna Bhima Samruddhi Local Area Bank Ltd. The RBI regulations allowed LABs to open only one urban centre per district. The Rural Planning and Credit Department (RPCD) of the RBI had regulatory and supervisory jurisdiction over the LABs. The RPCD issued licenses to the LABs as per the provisions of the Banking Regulations Act 1949. Supervision of the LABs was undertaken by the Annual Financial Inspection of the Department of Banking Supervision. This included several functions such as inspection of management functions, function of the board and constitution of various committees, internal control system, internal audit and inspection, information system, deposit advance and investment portfolio, NPAs, profitability, capital adequacy, and maintenance of statutory norms such as Cash Reserve Ratio (CRR)and Statutory Liquidity Ratio (SLR).

LABs activities mainly concentrated in financing agricultural and related activities, certain small-scale industries, trading activities, and some non-farm activities. LABs were mandated to spend 40 % of the total bank credit on the priority sector. Of this 40 %, at least 25 % should be given to the economically weaker section of society. LABs also had to maintain a capital adequacy ratio of 8 % of their risk-weighted assets. LABs also had to comply with the norms of income recognition, asset classification, and provisioning from the outset. Later these norms were revised on the recommendations of The Working of the Local Area Bank Scheme Committee in August 2003. The committee also recommended the suspension of new licenses until the existing banks were able to show better performances— Capital Adequacy Ratio (CAR) 15 % and a net worth of INR 250 Mn. In April 2008, the Raghuram Rajan Committee suggested restarting the LAB license, but this was ignored by the RBI at that time and further licenses were not issued.

(*continued*)

Box 7.1 (continued)

Borrowers from BASIX had a choice of loan products, typically at an annual percentage of 24 %. The loans were mostly given to individuals, but sometimes group loans were also given to the clients to make them jointly liable. The average loan size was approximately Rs. 8800 with the loan tenure being around 11 to 24 months. The loan size has been decreasing as BASIX constantly reaches out to poorer people. Following economic liberalisation in India, an insurance policy has been launched by BASIX, which is bundled along with its standard loans.

SKS Microfinance

SKS was founded in December 1997 by Vikram Akula as a not-for-profit organisation, and went into operation in 1998 in Andhra Pradesh. SKS looked to getting debt from banking institutions. Soon SKS partnered with ICICI bank to receive big loans, which were used not only to provide loans, but also to improve the existing technology in place. With rapid growth it moved from not-for-profit to non-banking financial institutions. This happened in 2005, and from here the change from nonprofit to for-profit happened. SKS soon grew to be the largest MFI in India and second largest in the world. SKS microfinance offered eight financial products and services to its clients—income generation loans, midterm loans, mobile loans, sangam store loans, housing loans, funeral assistance, gold loans, and life insurance. The company lists some of the social benefits of its financial products and service offerings as "providing self-employed women financial assistance to support their business enterprises, such as raising livestock, running local retail shops called 'kirana' stores, providing tailoring and other assorted trade and services."

Microfinance is not suitable for those who need not just access to finance but livelihood training and social and health inputs. SKS has a unique "Ultra Poor" program for this group. Under the program, the beneficiaries receive training to run an income-generating enterprise, financial education, and assets. Over an 18-month period these beneficiaries are trained to become self-sufficient and graduate into regular microfinance. The first phase of the Ultra Poor program was

(*continued*)

Box 7.1 (continued)

conducted in the Medak district of Andhra Pradesh, where nearly 500 women were covered. In all, 426 women have successfully graduated from this program. In the next phase, the Ultra Poor program is being planned in some of the poorest districts of Orissa and Jharkhand.

SKS launched its initial public offering (IPO) in 2010. The motive of Vikram Akula was to mix profit making along with the social mission of microfinance. This was not endorsed by some of the stalwarts of microfinance, for example, Muhammad Yunus. To grow rapidly and expand at a very high pace, capital was needed, and had to be raised from the debt and equity market. The aid and donor money was drying up, and was not coming to the MFIs directly. This led to the need to tap the other capital markets. But the major requirement in the other capital markets was the need to have viable profit making business to access capital. To make sure this happened, SKS had to give money out at a higher interest rate. There were some repercussions to this; followed by the famous Andhra Pradesh ordinance, which is discussed in detail in the chapter. This created the crisis and the MFIs are trying to come out of this crisis.

Spandana

Spandana is another MFI based out of Hyderabad, Telengana. The Spandana startup team comprised a few like-minded people working for an NGO in planning and implementing development projects funded by government grants. Spandana started operating under the current name in 1998. Spandana began with the goal of being responsive to the low-income clients. Spandana faced similar problems in getting capital from the banks. Spandana tested and validated the MFI methods locally, built up efficiencies, removed bottlenecks to create viable model, and then moved to the banks to raise capital. Spandana broke even in the first formal year of operations. In the first two years of operations 1998–2000, Spandana crossed its first milestone of Rs. One Crore disbursements to roughly 2000 clients. By 2002, Spandana had reached out to almost 15,000 clients and achieved the critical mass. Around this time, the banks started looking

(*continued*)

Box 7.1 (continued)

at MFIs as a favourable and reliable banking entity. Rating agencies such as M-CRIL and CRISIL and other sector resource organisations played a critical role in critiquing and helping institutionalise the whole microfinance sector. With funds coming from banks, especially the ICICI bank, Spandana registered a Compounded Annual Growth Rate (CAGR) of 250 % over the next four years (Exhibit 6). By 2004, Spandana had reached out to over 1 lakh customers and had a loan portfolio of Rs. 5.5 Mn. Soon after, Spandana turned from being an NGO to a for-profit NBFC. Spandana faced the crisis after having a monumental growth during the Andhra Pradesh (AP) crisis. While Spandana had sought to move towards an IPO to raise capital after SKS, this did not occur as a result of both what happened to SKS and the fallout from the AP crisis.

SHARE

SHARE, one of the largest MFIs in India, started its operations in 1989 as a not-for-profit society, and was the first MFI in India to obtain a NBFC license. SHARE adopted a for-profit approach to create social returns by channelling funds from development institutions and commercial banks as collateral-free loans to Joint Liability Groups (JLGs). JLGs are central to the Grameen lending methodology that SHARE has replicated. SHARE currently serves more than 3.71 million members across 17 Indian states—AP, Chhattisgarh, Delhi, Karnataka, Maharashtra, Madhya Pradesh, Uttar Pradesh, Rajasthan, Bihar, Uttarakhand, Gujarat, Haryana, Tamil Nadu, West Bengal, Jharkhand, Kerala, and Assam. SHARE caters to the needs of poor rural women through its 3616 staff members spread across 798 branches, as of 31 March 2014. The total outstanding portfolio is about Rs 1758 crore. SHARE is another institution that had to delay the IPO plans due to the AP crisis.

Box 7.2: A Few Key Challenges for Indian MFIs

- **Reach**: MFIs are facing challenges in reaching the grass root level and lending money to trustworthy individuals. Scale has been a big problem. Achieving scale can be the one solution to most problems faced by the MFIs.
- **Lack of Collateral**: Often the villagers lack any collateral to pledge against the loan/finance they are borrowing from MFIs. Unlike traditional banks, MFIs do not take collateral because their target segment is poor, and would not have large enough assets to provide as collateral in general. Group lending and relying on JLGs has mitigated this problem to some extent.
- **Regulatory Issues**: Lack of regulatory frameworks makes it difficult for MFIs to get easy access to funds—equity and debt.
- **Operational Issues**: High fixed costs and operational inefficiencies can lead to higher operational costs. Reaching out to the grass root level requires significant capital. Moreover, trained officials would be needed to work at a lower cost.
- **Information Asymmetry**: Lack of credit history and credit worthy villagers could lead to adverse selection and moral hazard. Unlike banks that have access to credit history of an individual, the MFIs do not have this data, as it has yet to be built. Recently, MFIs are working on creating a credit bureau.
- **High Interest Rates of MFIs**: The high interest rate has been a perennial source of debate and discussion in the sector of microfinance. Some reasons for the high interest rates are listed below.
  - Default risk is high since the target segment is the economically weaker sections.
  - No collateral is taken for loans.
  - There is lack of economies of scale because of the size of the operation.
  - Transaction costs are high.

The growth of for-profit NBFC-MFIs attracted international private equity. Three private equity deals brought in US$52 million in 2008 followed by 11 deals the following year, which fetched US$178 million. This was followed by the spectacular IPO of SKS Microfinance, which made global headlines (Srinivasan 2010). On 28 July 2010, SKS became the first MFI in India to float its shares through an IPO. The IPO was successful by any financial market standard; the offering was 13 times oversubscribed and attracted leading investment groups, such as Morgan Stanley, JP Morgan, and George Soros' Quantum Fund. The company valuation reached the top of the offer band price at US$1.5 billion, and five weeks after trading began, the share price had risen 42 % (Singh 2013).

This was also the period in which tension started arising between NGO-MFIs and NBFC-MFIs, because there was a basic divergence in ideologies. NGO-MFIs continued to be driven by social objectives of poverty alleviation, women's empowerment, and capacity building, while NBFC-MFIs became more profit oriented in order to scale-up operations. Sa-Dhan, an industry body set up in 1999, had both types of MFIs as its members. Although NBFC-MFIs had larger market share, NGO-MFIs were more numerous, which allowed them to dominate the industry. This led the NBFC-MFIs to form their own association called MFIN in 2009.[10] There are 50 such MFIs, less than one-fourth of the MFIs that exist in India, but they account for at least 90 % of the business. Two key initiatives of MFIN were the creation of a code of conduct for the industry, and the development of a credit bureau. Both have received the status of Self Regulating Organisation (Bandyopadhyay 2014; Kumar 2015).

2010–2011 (Andhra Pradesh Crisis)

By June 2011, MFIs reached 31.4 million clients all over India. In terms of "client outreach—borrowers with outstanding accounts", there was growth of 17.6 % of MFI clients, and 4.9 % of SHG-Bank clients in 2010–11, highlighting that while both SHG and MFI models co-existed and flourished together, MFIs were growing at a much faster pace (Srinivasan 2012).

[10] Interviews with Matthew Titus (Sa-Dhan) and Alok Prasad (MFIN).

In FY 2011, the southern state of Andhra Pradesh had the highest concentration of microfinance operations with 17.31 million SHG members, and 6.24 million MFI clients. The total of microfinance loans in Andhra Pradesh, including both SHGs and MFIs, stood at Rs. 157 billion with the average loan outstanding per poor household at Rs. 62,527, which was the highest among all the states in India. This data implied that the state was highly penetrated by microfinance organisations, both MFIs and SHGs, giving rise to multiple borrowing. The World Banks Consultative Group to Assist the Poorest study indicated that the average household debt in Andhra Pradesh was Rs. 65,000, compared to a national average of Rs. 7700. This high penetration of both SHGs and MFIs also led to stiff competition for client outreach between the state-government sponsored SHG program known as "Indira Kranthi Patham (Velugu)" and large, privately owned MFIs resulting in wider conflict of interest (IFMR Investments 2014). Andhra Pradesh accounted for nearly 40 % of all microfinance activity in India. Hyderabad, the home of by far the largest number of microfinance giants, was virtually the capital of microfinance in India. Until a few months before the crisis, the state wore this distinction as a badge of honour. The sector also owed a lot to government support in Andhra Pradesh for its lead in this sector. In recent years, Andhra Pradesh has also been the home of a few of the fastest-growing for-profit MFIs, including the top two: SKS and Spandana (Chakrabarti and Ravi 2011).

SKS, which had made waves in the past by initiating the practice of private equity participation in the microfinance sector, had its headline-grabbing and hugely successful IPO, oversubscribed almost 14 times, in August 2010. To many it was the signal of the Indian microfinance industry coming of age, and several other capital issues were being planned even though many engaged in social sector activism, including Muhammad Yunus himself, were less than impressed by what they perceived to be a shift of focus from social impact to investor returns. The celebrations were short-lived however, and not just because of the top-level personnel changes happening at SKS soon after the IPO. Within weeks of the IPO, Andhra Pradesh was engulfed by a spate of close to 30 farmer suicides, allegedly linked to coercive collection methods of MFIs. More than half these unfortunate farmers were allegedly borrowers of SKS and/or Spandana (Chakrabarti and Ravi 2011).

The resulting crash in the stock of microfinance in Andhra Pradesh has few parallels in recent times. The political establishment swung into action following the suicides, and the MFIs were demonized in the media. Vandalism of MFI offices by political goons was followed by police interrogations. Overnight Andhra Pradesh's lauded sector and MFIs had become pariahs (Chakrabarti and Ravi 2011). Some suggest that the Andhra Pradesh government was not motivated by any desire to protect the poor, but to protect the uncompetitive government backed SHG programme run by the Society for Elimination of Rural Poverty (Legatum Ventures 2011).

This was not the first time that microfinance had been at the centre of negative media glare, not even in Andhra Pradesh. In 2006, a spate of suicides in the state's Krishna district had been linked to "barbaric" practices of MFIs. The government closed down 57 branches of the two largest MFIs (SHARE and Spandana) as well as those of few smaller MFIs because of unethical collection practices, illegal operational practices, poor governance, usurious interest rates, and profiteering. The near-saturation of Andhra Pradesh with microfinance was one of the most important enabling causes for the crisis (Kaur and Dey 2013). Borrowing from multiple sources like Velugu, the SHG scheme backed by the Andhra Pradesh government and assisted by the World Bank, resulted in the indebtedness of MFIs and moneylenders. The impasse ended with the state setting up village and Mandal-level vigilance committees to oversee the functioning of MFIs, the industry lobby proposing a code of conduct for MFIs, and the latter voluntarily reducing interest rates. This time the crisis was further precipitated by the promulgation of the Andhra Pradesh Microfinance Institutions (Regulation of Money Lending) Ordinance 2010, on October 15, later ratified by the Andhra Pradesh Assembly with some changes on December 15 (Chakrabarti and Ravi 2011).

The main features of the October ordinance included a requirement for MFIs to register themselves with government authorities, prevention of further lending in cases where loans were outstanding, and restriction of collection at a frequency no higher than once a month. The administrative bottlenecks made registration difficult and the widespread political campaign maligning the MFIs as loan sharks encouraged default. These factors brought the industry to a practical halt for several weeks in Andhra Pradesh. The reduction in collection frequency arguably affected saving discipline as

well. In any case, the major players saw their recovery rates drop from above 90 % to below 30 % postordinance. Clearly, the activity became untenable for most players in Andhra Pradesh and threatened the very survival of the sector on its home turf. The biggest victims were the poor who would now be denied access to credit (Chakrabarti and Ravi 2011).

Highlights of the Andhra Pradesh Microfinance Institutions (Regulation of Moneylenders) Act, 2010

- All MFIs should be registered with the district authority.
- No person should be a member of more than one SHG.
- All MFIs should make public the rate of interest charged by them for the loans extended.
- There would be a penalty on the use of coercive action by the MFIs.
- All MFIs are supposed to maintain records, registers and a cashbook, which need to be presented when demanded.
- In case of dispute settlement between the SHGs and its members or the SHGs and the MFIs, fast track courts would be set up.
- Any person who contravenes any provision of the Act shall be punishable with imprisonment for a period of six months or a fine up to the amount of Rs 10,000, or both.

Source: PRS Legislative Research

As a result of the ordinance, the repayment rates of MFI loans reduced significantly. Due to low repayment rates, MFIs, with exposure to Andhra Pradesh, suffered significant losses. Banks stopped lending to MFIs all over India, for fear that a similar situation would occur elsewhere. This resulted in a liquidity crunch for MFIs, which are largely dependent on bank lending as a funding source. With the sector at a standstill, MFIs, microfinance clients, banks, investors, and local governments were calling for new regulation to address the sector's issues. It compelled the RBI into looking at developing a policy for MFIs to end the impasse and avert such situations elsewhere (Chakrabarti and Ravi 2011).

The Malegam committee was constituted towards this end submitted its recommendations in January 2011. The recommendations are quite far-reaching in nature and include creating a new class of NBFCs and NBFC–MFIs for regulatory purposes. These NBFC–MFIs, the committee proposed, should have a net worth of at least Rs. 15 crore with a minimum of 90 % of their assets being "qualifying assets". These "qualifying assets" or

microloans are non-collateralised loans to households with annual income below Rs. 50,000, with loan size and/or total indebtedness not exceeding Rs. 25,000. Finally repayment should be monthly or less frequent. At least 75 % of the credit should be for income generating purposes. The NBFC–MFIs would be exempt from the Moneylenders Acts, and loans to these MFIs by banks would continue to enjoy priority-lending status. There needs to be a margin cap over cost of funds—12 % for MFIs with total loan portfolio size below Rs. 100 crore and 10 % for others—as well as an overall interest cap of 24 % on individual loans. Several provisions discourage over-borrowing, multiple-lending, and ghost-borrowing including measures making it the responsibility of the MFIs to ensure that a borrower is not part of more than one JLG until the time a Credit Information Bureau takes up the task. There are provisions for borrower protection including those regulating recovery methods, and the suggestion to formulate a client protection code by the designated sector regulator.

Box 7.3: Malegam Committee Report

Terms of Reference

- To review the definition of microfinance and MFIs for the purpose of regulating NBFCs undertaking microfinance by the RBI
- To delineate objectives and scope of regulation of NBFCs undertaking microfinance by the RBI
- To recommend a grievance redressal system that could be put in place to ensure adherence to the regulation recommendations
- To examine the prevalent practices of MFIs with regard to interest rates, lending and recovery to identify trends that impinge on borrowers' interest
- To examine conditions under which loans to MFIs can be classified as priority sector lending (PSL) and make appropriate recommendations
- To examine the role that bodies of MFIs could play in enhancing transparency disclosure and best practices

(*continued*)

Box 7.3 (continued)

Key Recommendations

Classification of NBFC-MFI	• Create a separate category for NBFCs operating in the microfinance sector called the NBFC-MFI with the following features: (a) provides financial services predominantly to low-income borrowers, (b) with loans of small amounts, (c) for short-terms, (d) on unsecured basis, (e) mainly for income-generating activities, (f) with repayment schedules which are more frequent than those of commercial banks, and (g) which conform to the regulations specified. • An NBFC which does not qualify as an NBFC-MFI should not be permitted to give loans to the microfinance sector, which in the aggregate exceed 10 % of its total assets.
Interest rate	**Pricing of interest rate** • A "margin cap" of 10 % in respect of MFIs which have an outstanding loan portfolio at the beginning of the year of Rs 100 crore, • A "margin cap" of 12 % in respect of MFIs, which have an outstanding loan portfolio at the beginning of the year of an amount not exceeding Rs 100 crore, and • A cap of 24 % on individual loans. **Transparency in interest charges** • There should be three components in the pricing of the loan: (1) processing fee, not exceeding 1 % of the gross loan amount, (2) the interest charge, and (3) the insurance premium. • Only the actual cost of insurance should be recovered and no administrative charges should be levied. • Every MFI should provide the borrower with a loan card which shows the effective rate of interest and other terms and conditions. • There should not be any recovery of the security deposit. • There should be a standard loan agreement.

(*continued*)

Box 7.3 (continued)

Asset book conditions for NBFC-MFI	At least 90 % of its total assets (other than cash and bank balances and money market instruments) are in the nature of "qualifying assets". A "qualifying asset" shall mean a loan that satisfies the following criteria: • the loan is given to a borrower who is a member of a household whose annual income does not exceed Rs 50,000, • the amount of the loan does not exceed Rs 25,000 and the total outstanding indebtedness of the borrower including this loan also does not exceed Rs 25,000, • the tenure of the loan is not less than 12 months where the loan amount does not • exceed Rs 15,000 and 24 months in other cases with a right to the borrower of prepayment without penalty in all cases, • the loan is without collateral, • the aggregate amount of loans given for income generation purposes is not less than 75 % of the total given by the MFIs, • the loan is repayable by weekly, fortnightly or monthly instalments at the choice of the borrower The income it derives from other services is in accordance with the regulation specified.
Capital of NBFC-MFI	**Minimum net worth**: All NBFC-MFIs are required to have a minimum net worth of Rs 1.5 crores. **Capital adequacy ratio**: All NBFC-MFIs should be required to maintain a capital adequacy ratio of 15 %. Net owned funds should be in the form of Tier 1 capital.
Securitization and assignment	• Disclosure is made in the financial statements of MFIs of the outstanding loan portfolio, which has been assigned or securitized and the MFI continues as an agent for collection. • Where the assignment or securitization is with recourse, the full value of the outstanding loan portfolio assigned or securitized should be considered as risk-based assets for calculation of capital adequacy. • Where the assignment or securitization is without recourse but credit enhancement has been given, the value of the credit enhancement should be deducted from the net- owned funds for the purpose of calculation of capital adequacy. • Before acquiring assigned or securitized loans, banks should ensure that the loans have been made in accordance with the terms of the specified regulations.

(*continued*)

Box 7.3 (continued)

Provisioning of loans	• Provisioning for loans should not be maintained for individual loans but an MFI should be required to maintain at all times an aggregate provision for loan losses which shall be the higher of: (a) 1 % of the outstanding loan portfolio, or (b) 50 % of the aggregate loan instalments that are overdue for more than 90 days and less than 180 days and 100 % of the aggregate loan instalments that are overdue for 180 days or more.
Lending process	• MFIs should lend to an individual borrower only as a member of a JLG and should have the responsibility of ensuring that borrower is not a member of another JLG. • A borrower cannot be a member of more than one SHG/JLG. • Not more than two MFIs should lend to the same borrower. • There must be a minimum period of moratorium between the grant of the loan and the commencement of its repayment. • Recovery of loan given in violation of the regulations should be deferred until all prior loans are fully repaid. • All sanctioning and disbursement of loans should be done only at a central location and more than one individual should be involved in this function. • There should be close supervision of the disbursement function.
Recovery process	• MFIs should ensure that coercive methods of recovery are not used. In case of use of coercive methods, MFIs should be subject to severe penalties. • MFIs should have a proper Code of Conduct and proper systems for recruitment, training, and supervision of field staff to ensure the prevention of coercive methods of recovery.
Credit information bureau	One or more credit information bureaus should be established and be operational as soon as possible, and all MFIs should be required to become members of such bureau. In the meantime, the responsibility to obtain information from potential borrowers regarding existing borrowings should be on the MFI.

(*continued*)

Box 7.3 (continued)

Funding of MFIs	• Bank lending to the microfinance sector both through the SBLP Programme and directly should be significantly increased, and this should result in a reduction in the lending interest rates. • Bank advances to the MFIs shall continue to enjoy PSL status. However, advances to MFIs which do not comply with the regulation should be denied such status. • The creation of one or more "Domestic Social Capital Funds" may be examined in consultation with SEBI. • MFIs should be encouraged to issue preference capital with a ceiling on the coupon rate and this can be treated as part of Tier 2 capital subject to capital adequacy norms.
Monitoring of compliance	• The primary responsibility for ensuring compliance with the regulations should rest with the MFI itself and it should be penalized in case of noncompliance. • Banks should also conduct surveillance of MFIs through their branches. • The RBIs should have the responsibility for off-site and on-site supervision of MFIs. • The RBI should have the power to remove from office the CEO and/or a director in the event of persistent violation of the regulations.
Regulation	NBFC-MFIs should be exempted from the provisions of the Money-Lending Acts, especially since there are recommendations regarding interest margin caps and increased regulation. **Key Features of the Proposed Microfinance (Development and Regulation) Bill, 2010** • Should provide for all entities covered by the Act to be registered with the Regulator. However, entities where aggregate loan portfolio does not exceed Rs 10 crores may be exempted from registration. • If NABARD is designated as the regulator under the proposed Act, there must be close coordination between NABARD and the RBI in the formulation of the regulations. • The microfinance entities governed by the proposed Act should not be allowed to do the business of providing thrift services.

2011–2015 (The Slow Rebound)

The Andhra Pradesh crisis left microfinance companies such as SHARE Microfin, Asmitha Microfin, Spandana Sphoorty Financial, Trident Microfin, and Future Financial Services with negative net worth. According to norms, banks are not allowed to provide fresh loans to companies that have negative net worth. Since banks stopped lending to MFIs, they were not able to disburse fresh loans to their clients. Banks were also hit by crisis as 80 % of loans MFIs borrowed were from the banks. Of the Rs 21,000 crore that banks had outstanding to MFIs, roughly a third was borrowed from private banks. Banks and financial institutions lost their trust in MFIs credibility to repay the loans. Fresh lending to MFIs by banks during 2011–2012 declined by over 38 % as compared to the previous year. Loans outstanding against MFIs came down by almost 17 % during 2011–2012. Gross loan portfolios also shrunk by 14 % in FY 2011–2012, and were reduced to Rs. 172 billion. The crisis hit the operational self-sufficiency of Andhra Pradesh based MFIs badly as it fell from 150 to 40 % in FY 2011–2012. The crisis affected the portfolio quality of MFIs to the extent that they were the worst performer on the global platform. As pointed out by Srinivasan (2012), "The Andhra Pradesh regulation is right on intent, but wrong in its focus, coverage, and application. Inappropriate regulation produces long-term damage that is difficult to remedy" (Kaur and Dey 2013).

On the regulatory side, subsequent to the Malegam committee recommendations, the RBI came up with two significant notifications. One was to accord priority sector status to bank lending to MFIs, and the other was the NBFC-MFIs Directions 2011. While the former covers bank lending to all kinds of MFIs, the latter covers the NBFC-MFIs, which are recognised as a separate category of NBFCs. Both regulations define qualifying assets, income criteria for borrowers, limits for indebtedness, targets for income generation loans, pricing structure including margin cap and interest rate cap, lending practices, and so on. MFIs by and large are compliant with the regulatory prescriptions made by RBI (Sa-Dhan 2014).

A Credit Bureau

A key development after the RBI guidelines were implemented was that all MFIs have to report to at least one of the MFI-specific credit bureaus in the country (High Mark, Equifax, and more recently Experian), and have to check every loan application with the credit bureau to establish the level of indebtedness of the applicant. The following thresholds are prescribed by the RBI:

1. Total indebtedness of the borrower should not exceed Rs 50,000
2. The MFI should ensure that:

- Borrower does not have more than two NBFC-MFIs loans
- Borrower cannot be a member of more than one of its SHGs/JLGs
- It does not lend to a single person as an individual and group borrower simultaneously

These measures ensure that there is very low likelihood of a borrower becoming overindebted through microfinance loans as it limits both the exposure as well as the number of providers to a single borrower. However, the informal borrowings of borrowers (highly likely) and formal borrowings from banks (highly unlikely) are not captured here.

Drafting of a New Bill

The central government also swung into action with the Ministry of Finance constituting a committee in March 2011 to recommend a draft of a new law to regulate the sector. This committee had members from the Department of Financial Services, RBI, Indian Banks Association, NABARD, SIDBI, the State Governments (Bihar and Tamil Nadu), and State Level Bankers' Committee, Andhra Pradesh. The MFIs were represented by the MFIN and Sa-Dhan. The draft bill formulated by the committee was put on the website of the Ministry of Finance to invite comments from stakeholders. The Department of Financial Services organised a round table on the draft bill on July 28, 2011, where the representatives of the Andhra Pradesh

government were also invited to express their views. After considering the comments received from various stakeholders, the government introduced the Micro Finance Institutions (Development and Regulation) Bill 2012, which was introduced in Lok Sabha on May 22, 2012, and referred to the Departmentally Related Standing Committee on Finance on May 25, 2012 (Standing Committee Report 2014).

The bill sought to establish the RBI as the regulator of the sector with powers to: (1) specify the maximum limit of the margin and annual percentage rate which can be charged by any MFI, sector-related benchmarks, performance standards pertaining to methods of operation, and set fair and reasonable methods of recovery of loans advanced by the MFIs; and (2) inspect the accounts of the MFIs and take necessary action.

Box 7.4: Comparison of 2007 Bill and 2012 Bill

Aspects	Microfinance Bill, 2007	Microfinance Bill, 2012
Scope and application	Only NGO-MFIs registered as societies, trusts, and cooperatives (i.e. excluding NBFCs and Section 25 companies)	All MFIs in all forms
Structure of the sector	One tier, MFOs only (apart from NBFCs and Section 25 companies, but no provisions applicable to them)	The sector is now covered under the provisions of the Bill in its entirety
Savings mobilization	Only 'thrift' for MFO from members	Thrift mobilization from public also permitted
Supervisor	NABARD	RBI—with powers to delegate to NABARD and to other agencies as may be deemed fit
Advisory council	Advisory, with majority consisting of officials representing specified agencies ex-officio	In addition to a national level council, provisions have been made for state level councils as well as district level committees for monitoring of functioning of MFIs

(*continued*)

Box 7.4 (continued)

Grievances handling and appellate authority	MFDC 'may' set up ombudsman	Ombudsman provided for
Capital norms	NOF of at least Rs. 5 lakh and a capital adequacy ratio of 15 %	Rs. 5 lakh as minimum entry capital—RBI to stipulate prudential norms
Instruments	Registration for thrift taking MFOs and information reporting for all	Registration for all, information reporting and interest rate caps
Customer protection	Through Ombudsman	Norms for customer selection, size of loans, interest disclosure, process controls and interest/margin ceilings. Also through District Micro Finance Committees
Powers of regulator	Minimal	Power to cancel registration, order for winding up, merger and acquisition, imposition of penalties, delegation of powers, issuance of directions

Different stakeholders had diverse views on the regulations. The NBFC-MFIs, under MFIN, believed that since NBFCs are governed by the RBI, they need not be subjected to more regulation. However, the standing committee rejected the bill in its present form, urged the Ministry to hold wider consultations and review its fundamental proposals. Since this bill sought to bring in unincorporated MFIs, which were few in number, under RBI's ambit, the committee suggested that the bill be reconsidered, and instead the states should be allowed to bring unincorporated

MFIs under the ambit of state money lending laws. Given the lack of concurrence of the RBI with this bill, the committee suggested the formation of an independent regulator, which would have representatives from all concerned agencies. Additionally, the committee felt that the government should persist in pursuing the bank-led model for financial inclusion. Lastly, the government should consider statutory rights for bank accounts. The bill lapsed with the dissolution of the 14th Lok Sabha (Standing Committee Report 2014).

Mor Committee Recommendations for Policy

Just after Dr. Raghuram Rajan took over as the new Governor of RBI in September 2013, he announced the formation of the 'Committee on Comprehensive Financial Services for Small Businesses and Low Income Households' under the chairmanship of Dr. Nachiket Mor. The committee drew heavily on people with international experience, the private sector, and those who had resorted to disruptive innovation. The report was submitted on December 31, 2013. The mandate of the committee was to frame a clear and detailed vision of financial inclusion and financial deepening in India. The committee has made recommendations related to the working of NBFC-MFIs, and set a number of targets to be achieved by January 1, 2016 and:

- Provide each Indian resident above the age of 18 with an individual, full-service electronic bank account
- Set up widely distributed Electronic Payment Access Points offering deposit and withdrawal facilities at reasonable cost
- Provided each low-income household convenient access to formally regulated providers that can provide suitable (a) credit products, (b) investment and deposit products, and (c) insurance and risk management products at a reasonable price
- Provide every customer the legally protected right to be offered suitable financial services.

Box 7.5: Mor Committee Report

The Report of the Committee on Comprehensive Financial Services for Small Business and Low-Income Households (Chairperson: Dr. Nachiket Mor, December 31, 2013)

Terms of reference

1. To frame a clear and detailed vision for financial inclusion and financial deepening in India.
2. To lay down a set of design principles that will guide the development of institutional frameworks and regulation for achieving financial inclusion and financial deepening.
3. To review existing strategies and develop new ones that address specific barriers to progress and that encourage participants to work swiftly towards achieving full inclusion and financial deepening, consistent with the design principles.
4. To develop a comprehensive monitoring framework to track the progress of the financial inclusion and deepening efforts on a nationwide basis.
5. Any other related issue/s the Committee may want to opine on.

Targets to be achieved by January 1, 2016

- Provide each Indian resident above the age of 18 with an individual, full-service electronic bank account
- Set up widely distributed Electronic Payment Access Points offering deposit and withdrawal facilities at reasonable cost
- Provide each low-income household convenient access to formally regulated providers that can provide suitable: (a) credit products, (b) investment and deposit products, and (c) insurance and risk management products at a reasonable price
- Provide every customer the legally protected right to be offered suitable financial services

Wide-spread payment network and universal access to savings	• Every resident should receive a Universal Electronic Bank Account at the time of registering for an Aadhaar card. • RBI should prohibit banks from refusing to open an account and make Aadhaar the universal basis for authentication. • Set up Payments Banks whose primary purpose will be to provide payments services and deposit products to small businesses and low income households. These banks will be restricted to holding a maximum balance of Rs 50,000 per customer and will be required to have a minimum entry capital of Rs 50 crore. • Set up wholesale banks that will lend to corporations and purchase securitized retail and small-business loans. These banks will only accept deposits larger than Rs 5 crore and will require minimum entry capital of Rs 50 crore.

(*continued*)

Box 7.5 (continued)

Sufficient access to affordable formal credit	• Steps should be taken to help banks manage their credit exposures effectively, including allowing banks to purchase portfolio insurance. • Universal reporting of information with credit bureaus should be mandatory for all loans, especially kisan credit cards and general credit cards. • Banks should price farm loans based on risk and any waivers should be provided by the government through direct benefit transfer and not through interest subsidies or loan waivers. • Establish a State Finance Regulatory Commission into which all state level financial regulators will be merged. • The Non-Performing Asset reporting provisions and other regulations for NBFCs should be aligned with those of banks. • In order to ease funding constraints of NBFCs, there should be relaxation of External Commercial Borrowings and equity investment rules. • Remove barriers to the transition of NBFCs into banks by including more sectors in the PSL classification.
Priority Sector Lending	• Investment by banks in bonds and equities and provision of guarantees to PSL beneficiaries should be counted towards meeting the banks' PSL targets. • Remove the cap on interest rate charged on loans to the ultimate borrower by the originating entity. The interest rate is capped at the base rate of the purchasing bank plus 8 % a year. • The PSL target should be revised from 40 to 50 % of credit provided. • RBI should constitute a working group to develop a framework for sharing data between telecom companies, electrical utilities and credit bureau. • Banks and financial institutions should verify land records of clients at the time of making loans. • Equity investment by banks in complementary infrastructure such as rural warehouses, market yards, godowns, silos should be eligible for PSL treatment.
Customer protection issues	• Financial service providers should be required to commit capital against customer protection risk. • Firms should be made liable to ensure suitability of products issued to customers and RBI should frame regulations regarding the same. • Establish a unified Financial Redress Agency that will handle customer grievances across all financial products in coordination with their respective regulators. • RBI should mandate all formal providers of financial services to households and small businesses to report on a quarterly basis. Also, two surveys of consumers should be conducted to measure financial inclusion.

Bandhan Gets Banking Licence

In April 2014, the RBI awarded Bandhan, a Kolkata based NBFC,[11] a banking license to act as a commercial bank along with the Infrastructure Development Finance Company (Economic Times 2014). These measures highlighted a way forward for the NBFC-MFIs, and gave the option to the MFIs to collect deposits, which would go a long way in reducing the cost of capital.

The industry also has taken precautions to ensure that MFIs do not indulge in malpractices. The Code of Conduct issued by the Self-Regulatory Organisation for MFIs in India, MFIN now requires member MFIs to participate in a forum to share qualitative credit information. Whenever any member MFI comes across incidents of high default/mass default, the MFI is required to inform MFIN so that the other member MFIs are made aware of it. However, whether any other MFI would further lend to clients in such an area would be the choice of each institution based on their credit policies, and transparency in sharing this decision with other member MFIs is encouraged. In case of any high default incidents faced by one MFI, all member MFIs are called upon to cooperate in a recovery drive and restrain lending in that area till the issue is resolved.

Recovery of the Sector

With these regulatory interventions, the MFIs have slowly started recovering with some improvement in the funding environment. Banks have resumed funding activity. Total debt of the MFIs has increased to Rs 11,001 crore in FY13 from Rs 6661 crore in FY12. The sector has also been attracting regular equity infusion from private equity investors reflecting the increasing confidence of the investors regarding the growth potential in the sector.

The sector has rebounded and shows encouraging growth trends. Client numbers have now reached 28 million for NBFC-MFIs alone, and

[11] Set up in 2001 by Chandra Shekhar Ghosh, Kolkata-based Bandhan began with a focus on working with "socially disadvantaged and economically exploited women". With 2016 branches across 22 states and Union territories, Bandhan had over 52.33 lakh borrowers as of February. It disbursed Rs 963 crore of loans in February and has total loans outstanding of Rs 5704 crore.

outstanding loan portfolio has crossed Rs. 279 billion. This represents historically the highest point in the industry's growth (IFMR Investments 2014; CARE Ratings 2014, Figs. 7.6 and 7.7).

The 2014 general elections brought the Narendra Modi led National Democratic Alliance government to power. The government has made financial inclusion a priority and has taken steps towards this direction. Prime Minister Modi launched an ambitious programme on financial inclusion called Pradhan Mantri Jan Dhan Yojana. This scheme seeks to: (a) provide bank accounts to every household in India (estimated at 6 crore in rural areas and 1.5 crore in urban areas); (b) open bank accounts with RuPay Debit Card and mobile banking facility; (c) cash withdrawal and deposits; (d) transfer; (e) balance inquiry; (f) mini statement. The RuPay debit card would have inbuilt accident insurance coverage of Rs 1 lakh. An overdraft facility of up to Rs 5000 would be provided after six months of satisfactory performance of saving/credit history. As of January 2015, 11.5 crore bank accounts have been opened against an original target of 7.5 crore

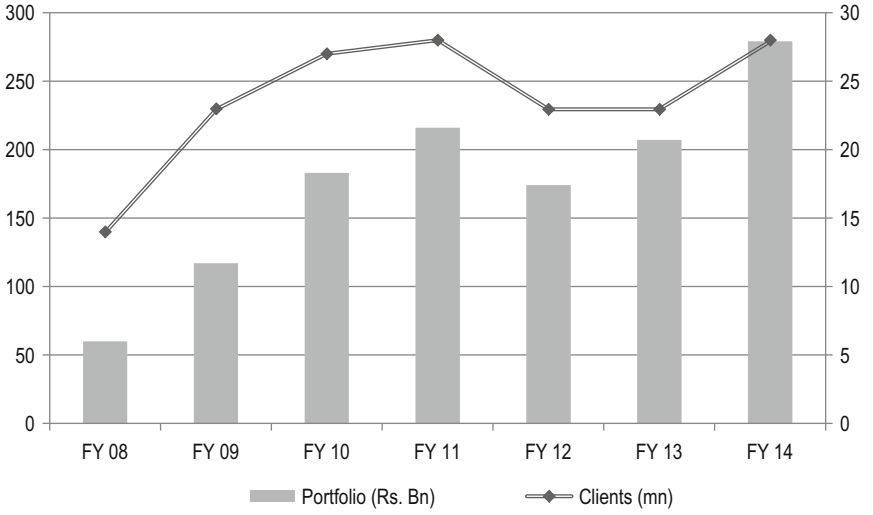

Fig. 7.6 Borrowers and portfolio outstanding of MFIs in India across years. *Sources*: MIX Market data until FY11, Micrometer data FY12–FY14: only includes NBFCs and NBFC-MFIs for FY12–14

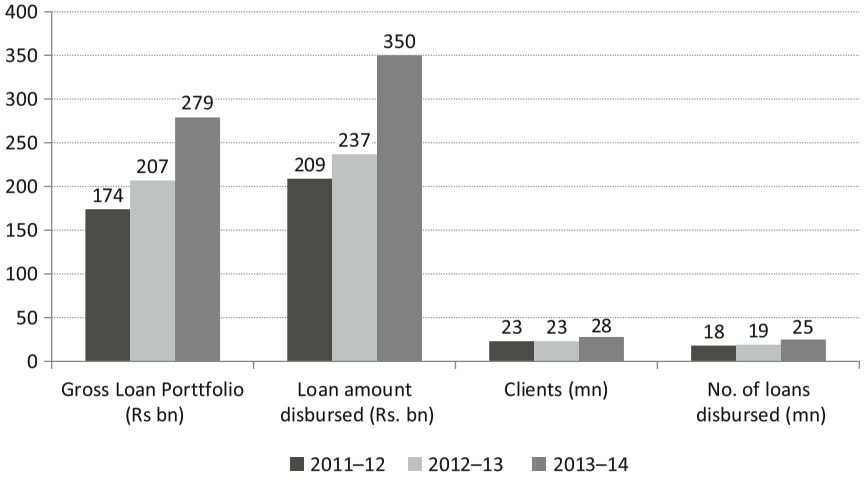

Fig. 7.7 Growth trends of NBFC-MFIs.
Source: Inclusive Finance India Report 2014, Tara Nair, Ajay Tankha, ACCESS 2015

(Press Information Bureau 2015a). Based on the Standing Committee of Finance's recommendations, the government has also started the consultative process for a new law to govern the microfinance sector.

Establishment of the Micro Units Development and Refinance Agency Bank

In its Union Budget 2015–2016, the government announced that it plans to set up a Micro Units Development and Refinance Agency (MUDRA) Bank through a statutory enactment. This bank would be responsible for regulating and refinancing all MFIs. The bank would partner with state level and regional level co-ordinators to provide finance to Last Mile Financer of small/micro business enterprises. It would act as a single regulator for all types of entities in the microfinance space.

The MUDRA Bank would primarily be responsible for the following:

- Providing policy guidelines for micro/small enterprise financing business
- Registration of MFI entities
- Regulation of MFI entities
- Accreditation and rating of MFI entities
- Providing responsible financing practices to ward off indebtedness, ensure proper client protection principles, and methods of recovery
- Development of standardised set of covenants governing last mile lending to micro and small enterprises
- Promoting right technology solutions for the last mile
- Formulating and operating Credit Guarantee scheme for providing guarantees to the loans which are being extended to micro enterprises
- Creating a good architecture of Last Mile Credit Delivery to micro businesses under the scheme of Pradhan Mantri Mudra Yojana
- In lending, priority will be given to SC/ST enterprises

A sum of Rs 20,000 crores would be allocated to the MUDRA Bank from the money available from shortfalls of PSL for creating a Refinance Fund to provide refinance to the Last Mile Financers. Another Rs 3000

crore would be provided to the MUDRA Bank from the budget to create a Credit Guarantee corpus for guaranteeing loans being provided to the micro enterprises (Press Information Bureau 2015b).

Since the enactment for MUDRA is likely to take some time, it has been proposed to initiate MUDRA as a unit of SIDBI in order to benefit from its initiatives and expertise.

Conclusion

Since the 1950s, the government and the RBI have implemented a host of measures to increase access to financial services for the poor including the nationalisation of banks, building up of robust branch networks of scheduled commercial banks, co-operatives and RRBs, and the introduction of mandated PSL targets. While there has been significant progress since the 1950s through the bank-led model of financial inclusion,[12] there is still room for improvement on both financial inclusion and financial depth. In 2012, an estimate suggested that close to 90 % of small businesses have no links with formal financial institutions, and 60 % of the rural and urban population do not even have a functional bank account (RBI 2013). The Census for 2011 held that only 58.7 % (rural: 54 %; urban: 68 %) of households are using banking services in the country. However, only 11 % of those who had accounts made savings, and only 8 % took loans (Ministry of Finance and Government of India 2014). The National Council of Applied Economic Research's National Survey of Household Income and Expenditure 2011–2012 survey indicated that on average, less than 30 % of those in the bottommost quintile have a bank account, and about 50 % of household falling in the second quintile have bank accounts. From 2007 to 2012, 37.5 % of agricultural credit was accounted for by the southern states despite their constituting less than 20 % of India's gross cropped area, while the eastern and

[12] As of March 2014, there are 115,082 Scheduled Commercial Banks branches across the country. Of these, 43,962 branches (38 %) are in rural areas. The ATM network in the country stands at 160,055 as of March 2014. The number of rural ATMs increased from 5196 in March 2010 to 23,334 (15 %) in March 2014.

north-eastern states accounted for only 7.71 %, despite having comparable gross cropped area (RBI 2013).

Although India's microfinance outreach is the highest in the world at 30.3 million borrowers in March 2014, this covers only a small proportion of the total unbanked, underserved potential in the country. Out of a potential market size of Rs 1.5 trillion, the current penetration is only around Rs 600 billion. India still has about 650 million adults who lack access to formal source of borrowing (IFMR Investments 2014).

Given this background, it is imperative that new avenues for scaling up access to finance for the poor be found and implemented. However, it also raises a number of questions. Is microfinance the only answer or are there other alternatives? What are the benefits and drawbacks of the microfinance model? What lessons can other countries draw from India's experiences with the microfinance movement? We conclude the chapter by grappling with some of these questions.

Proponents of the microfinance model assert that it contributes to the decline in poverty through higher employment and incomes, leading to improved nutrition and education of the borrower's children (Morduch 1999). The critics, on the other hand, point out that microcredit drives the poor into a debt trap since the money loaned is used for consumption activities rather than for business investments. The high interest rates charged by MFIs have also come under criticism. Also, new evidence from a meta-study conducted by JPAL suggests that access to microcredit did not lead to substantial increases in income nor did it have substantial effect on women's empowerment, or investment in children's schooling. However, the evidence did point to households having more freedom of choice in the ways they made money, consumed, invested, and managed risks (Innovations for Poverty Action and The Abdul Latif Jameel Poverty Action Lab 2015).

The microfinance model still plays a modest role in India. In terms of client outreach and overall loan portfolio outstanding, the south still dominates followed by the east, central and west. The north and north-east remain underserved by MFIs. Given the size of the Indian market, there can be little impact without scaling up, which requires substantial funds to be accessed through the capital market. This leads to the inherent tension between achieving social impact and ensuring profitability.

Scaling up addresses the issue of outreach and sustainability, but there is fear that the focus of the MFIs may shift towards bigger loans (Kumar 2015).

An analysis of the microfinance movement in India shows that while the size of the MFIs operations remained small, the need for regulation was not widely articulated. It was only when the sector witnessed high growth between 2006 and 2010 that the ill-effects of the unbalanced nature of the growth emerged. Since the growth was more intensive in certain geographies, including Andhra Pradesh, these areas became saturated leading to high competition and aggressive lending. Aside from the vested interest of the political elite, the Andhra Pradesh crisis was precipitated by the lack of regulatory clarity. There was also fear that other states may follow suit and put such opaque regulations in place, disrupting the operations of the MFIs in the other states. The regulatory interventions of 2011 and 2012 have helped the microfinance sector to weather the crisis, and evolve into a better-regulated sector with more transparency, reporting structures, and client protection (CARE Ratings 2014).

One of the key lessons that may be drawn from the Indian experience with microfinance is the necessity of enabling a regulatory framework to ensure that the growth of the sector is accompanied by transparency, reporting norms, and client protection. With no specific microfinance regulation from the RBI, the sector was practically unregulated, which also meant it was open to regulation from virtually any agency. Avoiding such situations would go far in avoiding a crisis similar to the case of Andhra Pradesh.

Second, microfinance needs to be viewed through a wider lens that goes beyond microredit alone, since the poor need a whole range of financial services like credit, savings, insurance, money transfers, and pensions.

Third, the establishment of credit bureaus is critical to ensuring information sharing, but requires investments in technology by lenders. Lenders in India fear that this may be difficult to manage especially for smaller MFIs. There may be a need for government intervention to ensure that smaller MFIs also report to credit bureaus.

Fourth, it is essential for MFIs to train their staff and monitor them effectively. One of the key problems of the fast growing NBFC-MFIs was

that the only parameters to which the managements and boards seemed to pay attention to were the growth and health of the loan portfolio, and the reduction of operating costs. The field staff quickly learned to respond to being monitored and incentivised but ignored all the rest, including going to remote villages, searching for the really poor clients, handholding and training client groups before giving them the powers to approve each other's loans, ensuring client education, and providing adequate disclosure about interest rates and other terms.

Technology will and should play a key role in moving the microfinance movement forward, regardless of the speed with which it is resisted or accepted by policymakers. To achieve effective financial inclusion in India, both the players in the microfinance sector and the government need to complement each other's efforts in different ways. The microfinance sector could develop a wider array of financial services for the poor as well as look at other models in place globally such as Bolivia, Indonesia, and Brazil. The government needs to provide a facilitating environment to ensure that there is a stable flow of funds for microcredit transactions through regulatory uniformity and reducing policy uncertainty.

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Summary and Conclusions

This volume is an attempt to contribute to the growing body of scholarly work on financial inclusion, with a greater focus on the Asian region. All the chapters in this volume have brought out the relevance and importance of promoting financial inclusion in selected emerging and developing Asian economies. Considering the global priority that financial inclusion policies have taken on in recent years, it becomes all the more important to understand the policy trade-offs involved in promoting financial inclusion. In addition to empirically establishing the economic and social significance of promoting an inclusive financial system in Asia, the findings of the book also touch up on a wide ranging set of issues for Asian policymakers to deliberate upon, moving forward.

The collection of chapters in the book began with an attempt to develop a suitable measure of financial inclusion that would adequately capture the various dimensions of an inclusive financial system. Using the constructed measure, Chap. 1 attempted to quantify the extent of financial inclusion in selected Asian economies. The index of financial inclusion thus developed revealed that on average, Asian economies have achieved a "medium level" of financial inclusion, although significant heterogeneity

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can be found within the region, with some countries like Japan, Korea, Malaysia, and Brunei Darussalam achieving very "high" levels of financial inclusion. The chapter makes an important contribution to this field of literature by introducing a new index to capture financial inclusion which could be used in future empirical research.

Chapter 2 of the book went on to empirically investigate the key determinants of financial inclusion in selected Asian countries. The empirical results showed that individual characteristics like age and education positively influenced the use of formal financial services in Asia. The results were also suggestive that from a policy point of view, systematic attempts by policymakers to remove obstacles related to education and income can contribute to enhanced ownership of formal accounts which in turn can boost economic growth.

Closely related to the above findings, Chap. 3 provided further empirical evidence about the positive growth and development benefits of financial inclusion. The empirical results furnished in the chapter showed a clear and robust correlation between higher financial inclusion and lower poverty. However, one of the interesting anomalies that the chapter brought out was that greater financial inclusion does not generate the same positive and significant impact on income inequality. These results also seemed to indicate that policymakers in the region should focus on ironing out the barriers to achieving higher financial inclusion as that could in turn help them significantly dent poverty rates prevalent in the region.

One of the key recommendations of Chap. 3 was to specifically focus on provision of access to credit to lower-income groups through microfinance, for instance, that would in turn give them the ability to both engage in productive economic activities and smooth their consumption patterns when faced with economic shocks. However, what policy trade-offs would the Asian central banks face in light of such a push towards greater financial inclusion? Chapter 4 tackled this question in greater detail, empirically exploring the link between financial inclusion and monetary policy. Specifically, one of the important issues that the chapter focused on was how output and prices respond to changes in interest rates in selected Asian economies with different degrees of financial inclusion. Through rigorously estimated Euler equations, the empirical findings suggested that economies with a higher degree of financial inclusion tend to exhibit greater

interest rate sensitivity to changes in output and prices. Consequently, the impact of interest rate shocks on changes in output was relatively lower in economies that comprise a substantive financially excluded population. These results also indicated that greater financial inclusion policies could potentially result in increasing the importance of the interest rate channel of monetary policy transmission in the region, going forward.

Complementing the first two sections of the book which dealt with a set of empirical issues concerning the impacts and determinants of financial inclusion, the final section of the book provided an in-depth discussion on selected Asian economies of Indonesia, Sri Lanka, and India. The country case studies engaged not only in a stock-taking exercise of the various financial inclusion initiatives undertaken, but also evaluated the existing policy frameworks and challenges confronting such initiatives in these economies.

The chapter on Indonesia (Chap. 5), for instance, specifically argued that a branchless banking and agent-banking model with digital financial services would be the most suitable way forward to achieve greater financial inclusion in the country. Chapter 6 on Sri Lanka pointed out that though the use of loans and savings facilities was quite high among households, the use of insurance services and remittance facilities is yet to catch up, which can be mainly attributed to low levels of financial literacy in the country. The chapter also identified some key regulatory challenges concerning semiformal financial institutions that play an important role in promoting financial inclusion through microfinance in the country.

The last chapter concluded with a focus on India, a large emerging Asian economy, which has also been a laboratory of policy experiments on financial inclusion, especially microfinance. The chapter attempted to trace the history of microfinance in India and also emphasized the need to build a supporting regulatory framework that will ensure the sustainability of the growth of microfinance. The chapter also made an interesting case for policymakers to stop viewing microfinance from the narrow prism of microcredit and instead promote a wide range of financial services, moving forward.

To conclude, the book has not only highlighted the continued need to focus on enhancing financial inclusion related policies in Asia but also thrown open a plethora of interesting policy questions for future research.

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