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Chapter 8
Financial Inclusion and Inclusive Development in Indonesia

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Abstract Financial inclusion, defined as the proportion of individuals and firms making use of formal financial services, has become a central theme in discussions about how to achieve so-called inclusive development. Inclusive development refers to striving for equal development of all individuals, particularly including marginalized (that is the very poor) groups. According to many, financial inclusion plays an important role in achieving inclusive development. Unequal access to financial services can exclude people from the process of economic growth. This chapter studies the role of financial inclusion in the development process, taking a cross-country perspective in South East Asia as well as an interregional perspective using data from Indonesia. We first develop a conceptual model, linking financial inclusion operationalized as bank branch access, to economic growth. Based on this conceptual model, the empirical part of our analysis consists of three sections. First, we use an Asian cross-country comparison to enrich our understanding of the main patterns of financial inclusion and inclusive growth. Second, turning to the case of Indonesia, we first discuss the processes of restructuring and regionalization of the banking sector. These processes have led to substantial changes in access to banking services, particularly in nonurban areas. Third, we provide econometric evidence on the relationship between regional access to bank branches and regional economic development, demonstrating that financial inclusion is associated with per capita economic output at the provincial level. The Indonesian regional analysis relies on

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a panel regression of 33 provinces over 5 years (2011–2015). We find that financial access is significantly and positively associated with the regional economic level of development in Indonesia, controlling for the general economic circumstances and development level of the region. These results suggest there is a definite challenge for the government to shift the development approach toward inclusive growth through financial inclusion. This finding may help developing targeted interventions aimed at increasing the regional bank branch coverage in Indonesia.

Keywords Financial inclusion · Inclusive growth · Panel analysis · Indonesia · South East Asia

8.1 Introduction

In the past decades, emerging economies have shown robust economic growth and an emergence of a middle-class population, but at the same also an increasing income distribution gap and sluggish poverty reduction. While many of these countries have successfully kept their growth pace during a period of economic and financial crisis experienced by Western economies, several nations with a vast population (i.e., China, India, and Indonesia) are still coping with severe problems of income inequality, leaving many of its inhabitants living below the poverty line.

Financial intermediation provided by institutions such as banks, savings institutions, insurance companies, etc., plays a central role in allocating scarce resources efficiently in the economy. A substantial body of literature has discussed the relationship between the formal financial system and aggregate economic growth (i.e., Ductor & Grechyna, 2015; Levine, 1997, 2005; Liu & Hsu, 2006; Rajan & Zingales, 1998; Rajan & Zingales, 2003; Ruiz, 2017; Shahbaz et al., 2015).

Financial inclusion, defined as the proportion of individuals and firms making use of formal financial services, has become a central theme in discussions about how to achieve so-called inclusive economic development. Inclusive development refers to striving for equal development of all individuals, particularly including marginalized (that is the very poor) groups. According to many, financial inclusion plays an important role in achieving inclusive development. An inclusive financial system is often associated with an inclusive growth process. In particular, the poor may benefit from access to formal finance as it helps them with smoothing household consumption, investing more in education or running a start-up business. Unequal access to financial services can exclude people from the process of economic growth.

This chapter investigates the role of financial inclusion in the development process, taking a cross-country perspective in South East Asia as well as an interregional perspective, using data from Indonesia. We find that financial access is significantly and positively associated with the regional economic level of development in Indonesia. These results suggest there is a definite challenge for the government to shift the development approach toward inclusive growth through financial inclusion. We have organized the analysis in this chapter as follows.

Section 8.2 provides an overview of the general set-up of our study. In Sect. 8.2.1, we discuss the research aims and central research question. Section 8.2.2 addresses the challenges for governments of emerging economies with respect to achieving inclusive development. Section 8.2.3 shortly discusses the methodology used in our empirical work. Section 8.3 provides an overview of the relevant literature as a general background for why financial inclusion is important for obtaining inclusive growth. In Sect. 8.4, we present our empirical results. First, we discuss the Southeast Asian comparative perspective of financial inclusion, providing context to our findings for Indonesia. In particular, in this section we provide an overview of the relationship between financial inclusion and a number of key development indicators. Second, we introduce the case of Indonesia by discussing trends in the provision of banking services since the banking crisis in 1997. More specifically, we ask which effects financial reforms since the late 1990s have had on regional differences in financial inclusion. Third, we analyze the relationship between regional financial inclusion and regional economic development. Section 8.5 concludes.

8.2 General Set-Up of the Study

8.2.1 Research Question

Most studies on financial inclusion have been carried out in a cross-country setting and have shown the beneficial effects of an inclusive financial system for the economy. This chapter studies the relationship between financial inclusion and economic development both from a cross-country perspective in South East Asia as well as an interregional setting in Indonesia. Our approach provides a more accurate statistical inference regarding regional differences of the relationship between financial inclusion and economic development. Specifically, we state the following research question:

> Does financial inclusion affect regional economic development in Indonesia?

In order to answer this research question, we first ask ourselves what we know about this relationship by reviewing the literature. Building on this review and using a cross-country perspective, we investigate the patterns of financial inclusion and various outcome variables for a sample of South East Asian economies. We then turn to the case of Indonesia, studying trends in financial inclusion at the regional level and their impact on regional economic development.

8.2.2 Scientific and Social Significance of Research

This chapter aims at exploring further the relationship between financial inclusion and economic development. Offering financial services to a wide range of income groups, and in particular to the poorest and economically most vulnerable segments of the population, has been a real struggle for governments of many emerging economies. In particular, developing successful financial inclusion policies across different regions within countries has been a major challenge.

Our investigation enhances our understanding of the pivotal role of financial inclusion for achieving inclusive economic growth in emerging economies. The literature argues that financial inclusion is critical for achieving positive macroeconomic outcomes such as higher economic growth. To the best of our knowledge, our study is one of the first providing empirical evidence on the relationship between financial inclusion and economic development at the regional level. Such a regional perspective is important, because it helps us understanding better why financial inclusion at the national level may fail and whether and to what extent regional contextual characteristics determine the relationship between financial inclusion and economic development. In order to investigate the role of such regional-level variables, sufficient variation in these variables between regions is required.

Indonesia is a very interesting case study to analyze the importance of regional differences. First, it is a large country in terms of population. Second, there is quite some diversity in terms of the level of development between regions. Finally, and perhaps most importantly, regions within the country differ on a number of potentially important dimensions, in particular when it comes to formal and informal institutions. Financial inclusion policy has been set as national priority agenda. Still, expanding financial inclusion presents a formidable challenge in Indonesia.

8.2.3 Methodology

Throughout this chapter, the term financial inclusion will refer to the proportion of individuals and firms using formal financial services (Allen et al., 2016; Demirgüç-Kunt & Klapper, 2013; World Bank, 2014a, 2014b). We apply a quantitative approach to study the relationship between financial inclusion and economic development. We divide our quantitative analysis into two parts: a cross-country comparison of this relationship for a number of emerging economies in the South East Asian region and an interregional setting using data from different regions across Indonesia.

In the analysis, we make use of descriptive as well as inferential statistics. The cross-country analysis is based on the World Bank Global Financial Inclusion dataset (2014b). This dataset provides a wealth of information on the level of financial inclusion at the country level. Our analysis of the relationship between financial inclusion and economic development at the regional level is based on data from 33

Indonesian provinces for the period 2011–2015 provided by Indonesia Central Bureau Statistic, Financial Service Authority Republic of Indonesia, and Ministry of Home Affairs Republic of Indonesia. We estimate a panel regression model to examine the extent to which financial inclusion is associated with economic development at the regional level.

Our data includes information on regional gross domestic product per capita, bank branch density per km^2 (calculated as the number of bank offices in a region divided by the region's total land area), the human development index, and the unemployment rate. The latter two variables allow us to control for the general economic and developmental situation of different Indonesian provinces. One important aspect we consider when doing our regional-level analysis is the process of Indonesian banking sector reforms. These reforms have been going on since the late 1990s. Our analysis helps understanding the dynamics of and differences in financial inclusion between regions over time.

8.3 Literature Review

8.3.1 Inclusive Growth

Inclusive development refers to striving for equal development of all individuals, particularly including marginalized (that is the very poor) groups. According to the OECD, inclusive growth is "…economic growth that creates opportunity for all segments of the population and distributes the dividends of increased prosperity, both in monetary and non-monetary terms, fairly across society."[1] This organization approaches inclusive growth as a multidimensional concept, that is, it entails more than just the growth of income. The OECD also stresses that inclusive growth means that the proceeds of economic growth are shared among the total population of a country. A growing body of literature has investigated inclusive growth as part of sustainable growth that includes equality of opportunities (Ali & Son, 2007; Ali & Zhuang, 2007; Ianchovichina and Gable, 2011; Khan, 2012).

Empirical evidence suggests that inclusive growth is necessary to curb inequality and reduce poverty (Berg & Ostry, 2011; Kraay, 2004). The experience of several emerging economies in Asia reflects the case in which countries' rapid economic growth has not been equally shared among different parts of the population and has resulted in income differences between regions in a country (Ali & Zhuang, 2007). These countries thus did not achieve inclusive growth. What we know about inclusive growth is largely based on empirical studies investigating inclusive growth and its link to poverty and inequality.

[1] See the following web link: http://www.oecd.org/inclusive-growth/

8.3.2 Financial Inclusion

Many studies define financial inclusion as the access and use of financial services provided by formal financial institutions (Allen et al., 2016; Beck et al., 2007b). Often the focus is on financial services such as savings, credit, insurance, and payment services. Most research investigating financial inclusion utilizes bank account ownership and frequency of account use (i.e., transaction, payment) as their measure of financial inclusion (see, e.g., Allen et al., 2016). These studies mostly rely on the Global Financial Inclusion Index dataset developed by the World Bank (2014a, 2014b). They find that households' holding a bank account differs across countries due to individual- and/or household-specific factors, as well as regulatory constraints related to the formal financial system at the macro-level. At the same time, some studies find that being connected to and served by a bank does not necessarily lead to bank account usage (Beck & De La Torre, 2007; Kempson et al., 2004). This occurs because of the presence of informal financial services providers that may provide more affordable, flexible, and attractive services than formal financial institutions do.

From an institutional perspective, the *formal financial system* includes bank and nonbank financial institutions, such as savings associations. These institutions are formally regulated by the Central Bank. One consequence may be that access to their services is restricted, at least for some groups of the population who cannot fulfill specific requirements set by regulators. Examples of these requirements are the need for (financial) collateral when entering into a loan contract, having access to official documents such as a personal ID or registration number, etc.

On the other hand, informal financial providers, such as moneylenders, family members, shopkeepers, and group savings organizations such as so-called rotating savings and credit associations (also called ROSCAs), offer flexibility regarding access to and use of their services. Both formal and informal financial providers serve the market and therefore, to some extent, facilitate financial inclusion within the country, as illustrated in Fig. 8.1 (Kumar et al., 2005). In spite of this, in many countries a large share of the population is still excluded from accessing and using financial services.

The degree of financial inclusion and the type(s) of institutions available and accessible to various parts of the population may vary across countries and may depend on a list of variables, such as the macroeconomic environment, the development and specific features of the financial system, geographical characteristics and socio-demographic characteristics. For example, in the context of financial inclusion, Beck et al., (2007a) found that financial sector outreach and depth indicators are positively correlated with the level of economic development, the quality of institutions and regulatory environment, the existence and development of the credit information system, the availability of physical infrastructure, and the level of country's initial endowment. Demirgüç-Kunt et al., (2008) suggest that geographical characteristics, physical access to banks and the lack of proper documentation are the main barrier to access. Sarma and Pais (2011) show that physical infrastructure,

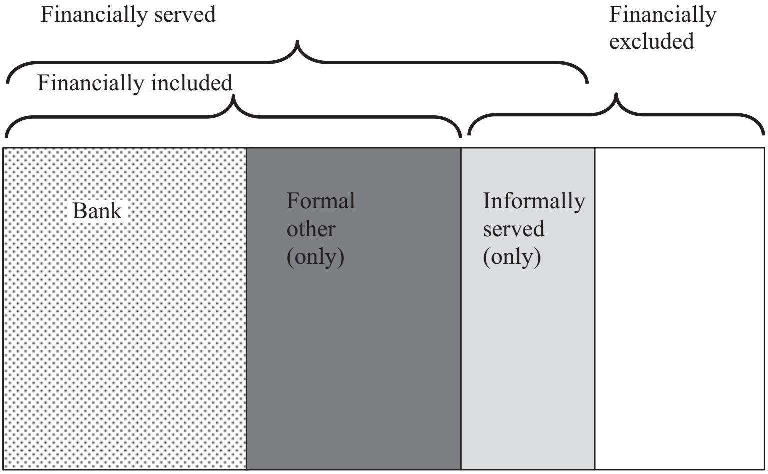

Fig. 8.1 Degree of financial access. (Source: Kumar et al. (2005b) in Barr et al. (2007), modified)

information and communication technologies are essential for financial services access. Hermes et al., (2009) argue that new banking technologies, such as ATMs, phone, and internet banking enhance financial services supply. Similarly, Porteous (2007) investigates the importance of financial communication for the financial services usage, e.g., receiving payments in combination with saving in Southern and East Africa.

Focusing on the supply side of financial services, studies found that several factors are essential for understanding financial infrastructure development (Porteous, 2007; World Bank, 2009). These studies show that the price of risk related to the offering of a specific financial product and the cost of location when offering financial services are important for understanding to what extent the financial system is inclusive. For example, the price of risk of lending to the poor may be too high for them to take a loan. Moreover, high costs of extending the bank branch network, for example because part of the population lives in relatively remote areas, may restrict the poor from having access to financial services. Figure 8.1 shows how financial access is related to the availability of financial services i.e., banks, other formal financial institutions, and informal financial services providers. Thus, people may be classified as financially included via formal and/or informal financial institutions, or as financially excluded.

During recent years, financial inclusion has seen a new development, known as the digitalization of financial services. This involves, among other things, the use of mobile phones to process banking transactions and the use of information and communication technology (ICT) for personal registration purposes. This has helped obtaining a wider distribution and use of financial services by the poor. Still, the digitalization process and its impact on financial inclusion has worked out differently across countries. According to the World Bank Global Findex Database 2014, mobile money penetration has been more promising in Sub-Saharan as compared to

Asian countries (Demirgüç-Kunt et al., 2015). Offering digital financial services seems to be a promising innovation. Yet, a deeper discussion of its consequences for financial inclusion is outside the scope of our study.

8.3.3 Empirical Evidence: Financial Inclusion and Inclusive Growth

Several studies analyze the link between financial sector development, financial inclusion, and inclusive growth. These studies investigate the extent to which formal financial sector development affects the poor through inclusiveness of economic opportunities. Several of these studies report that financial development affects the poor through aggregate growth and changes in the distribution of income (Beck et al., 2007a; Dabla-Norris et al., 2015b; Karpowicz, 2014). According to Beck and De La Torre (2007), financial development corresponds to poverty reduction through three channels: a decrease of income inequality, a rise of the income share of the poorest in the economy, and a reduction of the proportion of people living under the $1 per day poverty line. In a follow-up study, Gopalan and Kikuchi (2016) found that financial inclusion is crucial for inclusive macroeconomic growth. In contrast, however, Levine (2005) finds that financial development contributes to persistent income inequality and poverty incidence by disproportionately satisfying the affluent people and excluding the poor.

A limited number of studies focus on financial inclusion and its effects on the economy, Honohan (2008) report a robust and significant positive correlation between financial inclusion, lower poverty incidence, and measures of income inequality. Mercado (2016) also reports evidence of a positive association between financial inclusion and poverty in a sample of Asian countries. Taking a policy perspective, Baar (2004) discusses the implementation of financial inclusion strategies in the United States. The study shows that these policies enhance better access to financial services for the poor and unbankable people.

Most studies focus on the association between financial inclusion and inclusive economic growth only. The study by Dabla-Norris et al., (2015a) is one of the few that takes into account whether and to what extent country-specific characteristics, such as the nature of the financial system, have an impact on the association between financial inclusion and inclusive growth. Sehrawat and Giri (2015) take a similar approach using data from a sample of South Asian countries.

Our concise review of the literature suggests that equal opportunities of having access to financial services are important for inclusive growth. In addition, much of the available literature on this topic finds a positive association between financial inclusion and inclusive growth. Yet, few studies investigate factors that may suppress this positive association. Lack of access and under-use of financial services remains a challenge in many countries. Several authors point out that factors such as the inefficiency of capital allocation and the persistence of credit constraints for specific segments of the population may interfere with successful financial inclusion (see, e.g., Aghion & Bolton, 1997; Galor & Moav, 2004; Galor & Zeira, 1993). These factors are particularly important in developing economies, leading to complications in delivering greater access, usage, depth, and efficiency of intermediation of financial services. The World Bank (2016) suggests that removing restrictions for an inclusive, efficient and stable financial system is necessary for economic growth and poverty reduction. Barriers to financial inclusion vary however, both between as well as within countries.

In the next section, we start with a cross-country analysis of the association between financial inclusion and growth, using data from a sample of South Asian countries. Next, we carry out a within-country analysis of this relationship by focusing on the case of Indonesia. In particular, we study the impact of Indonesian government policies aiming at reforming the banking system. One important aspect of these reforms is the regionalization of bank branches. Our approach allows for an analysis of the relationship between regional financial access and regional GDP.

8.4 Analysis

8.4.1 International Comparison of Financial Inclusion

Our first set of results provides a descriptive analysis of the potential relationship between financial sector development, financial inclusion, and the distribution of economic output. We measure financial inclusion as the formal financial account penetration at the country level. Traditional economic growth theory shows that the determinants of economic growth may vary depending on the country-specific context. In our analysis, we are mainly interested in the relationship between financial sector development, financial inclusion, and economic growth. The analysis provides preliminary evidence showing that although a growing financial sector may increase a country's economic output, this may not necessarily reflect an increase of per capita welfare due to the absence of financial inclusion. Thus, financial development may contribute to persistent income inequality and poverty incidence by disproportionately satisfying the affluent people and excluding the poor.

Table 8.1 compares the economic level of development using GDP per capita as a measure, financial sector development measured as the private credit to GDP ratio, and financial inclusion measured as the formal account penetration rate, for a selected set of Asian countries. Looking further into how an inclusive financial sector is serving people, Table 8.1 also provides a deeper cross-country comparison of key measures of financial inclusion from the World Bank Global Financial Inclusion Index 2014 survey dataset. This dataset is based on information from surveys among 150,000 individuals in more than 140 states. The dataset represents 97% of the world's population aged 15 and above.

Table 8.1 Financial inclusion, economic and financial sector development, and formal account penetration

Country	Gross domestic product per capita (constant 2010 in US$)	Financial sector development (domestic credit from financial sector as % of GDP)	Financial inclusion (formal account penetration, % ages 15+)	Account at a financial institution		
				Income poorest 40% (% ages 15+)	Income richest 60% (% ages 15+)	Rural (% ages 15+)
China	6108	167.2	78.9	72.0	83.6	74.3
India	1646	76.0	52.7	43.7	58.5	49.7
Indonesia	3692	43.4	35.9	21.9	45.3	28.4
Singapore	51,865	126.1	96.3	96.2	96.4	n.a.
Malaysia	10,398	140.5	80.6	75.5	84.0	73.7
Thailand	5589	167.8	78.1	71.9	82.3	78.2
Philippines	2505	55.8	28.0	14.9	37.1	24.5
Vietnam	1596	113.7	30.8	18.7	39.4	26.9

Source: World Bank (2014b)

Table 8.1 shows that financial sector development in 2014 is positively related with GDP per capita, but that the relationship is rather weak. The data suggest that a lack of financial inclusion might be at the root of this. A high level of a country's financial sector development does not necessarily go hand in hand with an inclusive financial system. Higher levels of domestic credit provided by the financial sector as a percentage of GDP do not always play out in higher levels of financial inclusion. Take Vietnam as an example: despite this country's considerable level of financial sector development (113.7% in 2014), the level of financial inclusion is still relatively low. Only 30.8% of adults have an account with a formal financial institution in 2014. At the same time, the table shows that Indonesia has modest levels of financial development (43.4% in 2014), combined with a level of financial inclusion comparable to that of Vietnam. In Indonesia, 35.9% of adults have an account at a formal financial institution in 2014.

What stands out in Table 8.1 is that low level of financial inclusion corresponds to a low level of GDP per capita. For countries such as Indonesia, the Philippines and Vietnam, low levels of formal financial account penetration are associated with lower levels of GDP per capita.

The table illustrates the financial account usage stratified by income group and geography in selected Asian countries. From Table 8.1 we infer that formal financial account penetration in the sample of Asian countries has not been inclusive. Penetration ratios differ substantially across income groups and geographical areas. Whereas in some countries financial inclusion is high across income groups and in rural areas (Singapore, China, Malaysia, Thailand), in other countries it is still (very) low, both in general terms, as well as in terms of income groups and geographical location (Indonesia, the Philippines, and Vietnam). The table also indicates that on average the 40% poorest group of the population is the most vulnerable group in terms of being excluded from the formal financial system. In the Philippines, less than 15% of adults in this income group own a formal financial account. In Vietnam and Indonesia, this is 18.7% and 21.9%, respectively.

In addition, geographical location turns out to be a substantial factor in hampering financial inclusion. This may explain the financial inclusion divide between urban and rural areas in many countries. As can be seen from Table 8.1 formal financial account penetration is low in rural areas. In rural areas in the Philippines, only 25% of the adults have an account. In Indonesia, this is 28%, while in Vietnam it is only 27%. This can be explained by the fact that people living in urban areas enjoy greater proximity to formal financial access points such as bank branches, providing them with a higher level of financial service supply as compared to people living in rural area.

Next to formal financial institutions, informal finance plays an important role in providing financial services such as payment services, loans and savings, especially for the poorer sections of the population. Table 8.2 shows the usage of formal and informal financial services. This also holds for most Asian countries in our sample. According to the World Bank (2014a, 2014b), the practice of informal savings clubs as a form of peer-to-peer banking, is very pronounced in Indonesia. Some 25% of adults in Indonesia participate in these informal saving clubs. Similar patterns are shown for other Asian countries. Another form of informal finance is informal borrowing and lending between family members, neighbors and friends. In countries such as for instance in the Philippines and Indonesia, some 40–50% of adults use this type of informal financial services. Finally, individuals may borrow from informal financial institutions such as moneylenders and loan sharks. Depending on the country, the percentage of adults making used of these services lies between 9% (Thailand) and 13% (the Philippines).

Table 8.2 Use of formal and informal financial services—cross-country comparison

Country	Saved at financial institution (% age 15+)	Saved using saving club or person outside the family (% age 15+)	Borrowed from family or friends (% age 15+)	Borrowed from a private lender (% age 15+)	Borrowed from a financial institution (% age 15+)
China	41.15	2.54	25.06	1.06	9.55
India	14.36	8.78	32.30	12.57	6.37
Indonesia	26.56	25.23	41.49	2.94	13.14
Philippines	14.79	9.30	48.65	13.49	11.79
Thailand	40.60	8.43	31.12	9.15	15.40
Singapore	46.21	4.53	4.45	1.05	14.20
Malaysia	33.77	9.90	38.96	0.81	19.52

Source: World Bank (2014a, 2014b)

8.4.2 Depth and Breadth of Indonesia Financial Inclusion Policy

This section discusses the policies of the Indonesian government that may have influenced the country's financial inclusion. First, we discuss the financial system reforms that have been implemented since the late 1990s in response to the Asian financial crisis. Second, we shortly review the government's financial inclusion policy agenda since the 2000s. Finally, we provide a brief description of Bank Rakyat Indonesia, a large formal financial institution specializing in delivering financial services to the poorer segments of the Indonesian population.

Indonesia started reforming the financial system during the early 1990s. The reforms aimed at reducing the influence the government had on the financial system. In the decades before 1990, the government used the financial system to support its industrial policy goals. Banks were required to lend to firms in specific industries the government viewed as being critical for the long-term development of the country. Moreover, it determined the interest rates at which these loans were made, as well as the interest rates on saving accounts. Finally, the government owned some of the banks and restricted entry of new (foreign) banks to control competition in the market.

Financial sector liberalization coincided with the expansion and diffusion of the banking activity in the country's financial centers (i.e., Java and Sumatra). According to Nasution (1998), during the 1990s, there was a rapid expansion of banks' branch offices, new establishments of both national and foreign banks and the emergence of nonbank financial institutions. Unfortunately, these developments were not accompanied by prudent governance of the financial sector. At the same time, monetary and fiscal policy failed to prevent the Asian financial crisis in the 1990s. The crisis eventually led the Indonesian banking sector into widespread bankruptcy in 1997.

The financial sector reforms began in 1999 (Nasution, 1998) following two main strategies: mergers and consolidation of banks. Due to these mergers and consolidations, the sector was characterized by a lower number of banks and the establishment of several sizeable financial holding companies in the 2000s. Moreover, the government established a new set of bank regulation policies aimed at reducing the risk of financial distress and increasing financial prudence of banks. Due to these reforms the Indonesian financial sector again became highly regulated. This time, however, regulation was not used as part of the government's industrial development policy, but as a means to increase the stability of the system.

The Indonesian financial system reforms also influenced the level of financial inclusion of the country. Financial inclusion has been part of a national strategy involving institutions of all different sorts, such as banks, post offices, and retail networks. The primary concern is to support Government-to-Person (G2P) transfers and to provide financial services for the poor and low-income customers (Ekberg, Chowduri, & Soejachmoen, 2015). The National Strategy for Financial Inclusion achieves this by stimulating access to saving, credit, remittances and insurance, providing easy access to obtaining a personal financial identification numbers, offering financial literacy programs and using financial regulation and customer protection policies.

Under the National Strategy, financial inclusion is also stimulated by promoting microfinance. The scope of microfinance in Indonesia is unique compared to other countries, since the microfinance institutions in Indonesia also include agencies from both the formal and informal financial sector. According to Mosley (1996), at least before the 1990s 70% of rural households in Indonesia relied on informal moneylenders for their everyday cash needs. Access to formal financial services has improved considerably, however, since People's Credit Banks—also known as rural banks, were taking steps to serve poor households in rural Indonesia from the early 2000s. These rural banks were created by Indonesia's New Banking Act that was established after the financial crisis of 1997. This Act provided selected semi-formal microfinance institutions the status of a rural bank.

Lastly, Indonesia's state-owned bank, Bank Rakyat Indonesia (BRI) is an institution specializing in providing microfinance services (Robinson & World Bank, 2002). The bank is designed to meet the demand of low-income customers, who mostly live in rural and remote areas. During the Indonesian financial system collapse in the late 1990s, BRI was an example of a commercial microfinance bank that remained stable and profitable. Its endurance was because the BRI business model relies on a domestic and local economy with a large number of micro banking clients who were not affected by the financial crisis. Nowadays, BRI has successfully transformed into one of the big four corporate banks in Indonesia, serving commercial finance to micro-, small-, and medium-sized retail customers. At the same time, it also serves a wide range of corporate clients.

The growing financial, banking, nonbank financial industries in Indonesia need a trustworthy monitoring institution that oversees financial services sector in a broader institutional and geographical scope. Thus, Indonesia Financial Service Authority was established in 2014 to perform regulatory and supervisory duties over the financial sector. Several provisions have been released by OJK to enhance financial inclusion practices, through broader distribution channels, in a prudential financial system. For instance, Regulation No.19/POJK.03/2014 rules the implementation of branchless banking toward financial inclusion. Another regulation is Regulation No.10/POJK.05/2014 that rules the functioning of nonbank financial institutions. This agency also produces several regulations regarding microfinance licensing, business implementation, supervision.

8.4.3 Indonesia's Financial Inclusion and Inclusive Development: A Regional Perspective

We start this section by discussing the past Indonesian centralized development policy that resulted in spatially dividing regions, including its financial sector. Prior to the 1997 Indonesian economic reforms, Indonesia implemented a centralized development model. The model resulted in a large income gap between different regions in the country. The benefits of economic development were mainly enjoyed by the population of the two main islands of Indonesia: Java and Sumatra. These two islands have always been the primary driver of the Indonesian economy. Java and Sumatra contributed 58% and 22% to the country's total economic output (Indonesia Central Bureau Statistic, 2016).

Indonesia has demonstrated a high level of income inequality compared to other Asian countries. Indonesia's Gini coefficient, a widely used measure for income inequality, ranges from 0.34 in 2002 to 0.39 in 2017. It worsened at level 0.41 in 2014 (Indonesia Central Bureau Statistic, 2017). Recently, income inequality has gone down a bit, however, because of the catching up of the middle class to the top 20% of the population. Yet, the bottom 40% of the poorest households are still left behind. In fact, several regions report higher inequality compared to the national average; this holds for, e.g., DKI Jakarta, Banten, DI Yogyakarta, Papua Barat, Papua, and North Sulawesi.

Turning to data regarding access to financial services, Table 8.3 provides information regarding the regional presence of bank branches (Indonesia Central Bank, 2015). As can be seen from Table 8.3, the banks are predominantly located in urban areas on either Java or Sumatra. The regulated micro finance providers tend to reach the upper levels of the microfinance market in districts and sub-district towns in the urban areas. In contrast, the lower end of the market is served by NGOs, cooperatives, rural banks and village-based institutions. Therefore, commercial and rural bank branches are predominantly located in Java and Sumatra. Furthermore, as can be seen from Table 8.3, the branch expansion between regions in Indonesia is not equal. This is caused by the fact that these areas provide a more attractive market for the supply of financial services. Consequently, there is lack of access to financial services outside the two main islands of the country.

8.4.4 Financial Inclusion and Inclusive Development: An Econometric Analysis Model Interpretation

To start our analysis, we examine the correlation between our proxy of financial access, measured as the number of bank branches per km^2, and gross domestic regional product per capita (GDRP per capita). We use a pooled data partial correlation test. For both variables, we have data for 33 provinces in Indonesia for the period 2011–2015.

The result of the partial correlation test, controlling for year of observation, shows a strongly significant positive correlation (0.61) between the two variables. This suggests that high levels of financial access are associated with high levels of economic level of development at regional level.

Next, we investigate the association between financial inclusion and regional economic level of development using panel data regression analysis. Again, our data cover 33 provinces over the period 2011–2015. In panel data analysis we observe the same cross-sectional unit, in this case provinces, over different time periods

Table 8.3 Regional total bank branch offices per land area km^2 2011–2015

Total bank branch offices per land area (km^2) in region					
Region	2011	2012	2013	2014	2015
Java Island					
West Java	0.01043	0.01074	0.01111	0.01122	0.01122
Banten	0.00818	0.00962	0.00973	0.00983	0.00962
DKI Jakarta	0.80571	0.84938	0.86444	0.85691	0.81475
D.I. Yogyakarta	0.01724	0.01787	0.01883	0.01915	0.01915
Central Java	0.00915	0.00948	0.01000	0.01009	0.01000
East Java	0.00831	0.00860	0.00889	0.00891	0.00868
Sumatra Island					
Bengkulu	0.00136	0.00141	0.00151	0.00161	0.00176
Jambi	0.00096	0.00106	0.00118	0.00120	0.00122
Aceh	0.00126	0.00132	0.00136	0.00136	0.00134
North Sumatra	0.00244	0.00263	0.00273	0.00275	0.00281
West Sumatra	0.00183	0.00193	0.00200	0.00200	0.00202
Riau	0.00101	0.00101	0.00105	0.00108	0.00108
South Sumatra	0.00088	0.00102	0.00111	0.00109	0.00111
Bangka Belitung	0.00140	0.00134	0.00146	0.00164	0.00164
Kepulauan Riau	0.00622	0.00683	0.00719	0.00719	0.00719
Lampung	0.00144	0.00162	0.00168	0.00173	0.00176
Kalimantan Island					
South Kalimantan	0.00181	0.00191	0.00201	0.00188	0.00186
West Kalimantan	0.00047	0.00047	0.00050	0.00050	0.00050
East Kalimantan	0.00051	0.00053	0.00089	0.00092	0.00088
Central Kalimantan	0.00028	0.00030	0.00031	0.00029	0.00028
Sulawesi Island					
Central Sulawesi	0.00058	0.00061	0.00063	0.00065	0.00066
South Sulawesi	0.00259	0.00265	0.00280	0.00287	0.00280
North Sulawesi	0.00260	0.00274	0.00282	0.00289	0.00296
Gorontalo	0.00142	0.00142	0.00151	0.00151	0.00160
West Sulawesi	0.00077	0.00083	0.00089	0.00089	0.00089
South East Sulawesi	0.00079	0.00081	0.00092	0.00110	0.00113
Other Island					
West Nusa Tenggara	0.00226	0.00237	0.00264	0.00280	0.00280
Bali	0.01384	0.01471	0.01592	0.01609	0.01644
East Nusa Tenggara	0.00101	0.00105	0.00109	0.00111	0.00115
Maluku	0.00070	0.00064	0.00064	0.00068	0.00068
Papua	0.00017	0.00018	0.00018	0.00018	0.00019
North Maluku	0.00044	0.00056	0.00059	0.00066	0.00069
West Papua	0.00024	0.00026	0.00028	0.00025	0.00023

Source: Author (2017)

(Wooldridge, 2009). The advantage of panel data analysis is that combines a cross-sectional and time series dimension (Hsiao, 2007). First, it usually provides increased sample variance and degrees of freedom, resulting in a more accurate statistical inference. Second, it enables us to better control for unobserved time-constant and time-varying characteristics that may dilute our view on the relationship under study.

Our data were gathered from multiple sources covering the years 2011–2015. The dependent variable in our model is the regional per capita GDP level (constant prices) (Source: Indonesia Central Bureau Statistics, 2016). The main independent variable is the number of bank branches per km^2—that is calculated by the divided provincial number of bank offices by total land area). The data on the number of bank branches was extracted from Indonesia Banking Statistic (Financial Service Authority Republic Indonesia, 2016); while the total land area per province information were taken from the Statistical Yearbook of Indonesia (Directorate General of Regional Authority, Ministry of Home Affairs Republic of Indonesia, 2016). Moreover, we include control variables such as the human development index and the open unemployment rate. These two variables were drawn from Indonesia Central Bureau Statistics (2016). Human Development Index is a composite index of life expectancy, education, and living standard that was initially proposed by United Nation Development Program in 1990. In addition, open unemployment rate data was selected from Indonesia Labour Force Survey. It is calculated as a percentage of unemployed individuals divided by all individuals in the labor force. These variables allow us to control for the general regional economic situation and development level. This prevents spurious correlations resulting from omitted variable bias. We applied the Hausman specification test to investigate whether we should use the fixed-effects or the random-effects method in our panel model estimations. The results of the Hausman test revealed that we should utilize random-effects instead of a fixed-effects specification. Finally, all variables have been standardized. This allows to directly compare the effect sizes between the variables in our model.

The results, as shown in Table 8.4, indicate that bank per land km^2 area and per capita regional Gross Domestic Product (GDP) are positively and significantly associated at the 1% significance level. In particular, per capita regional GDP increases with 0.36 standard deviation when the number of banks per km^2 increases by one standard deviation across time and between regions. The effect of bank per km^2 is larger than that of the human development index, which also affects regional GDP per capita positively. The unemployment rate is negatively associated with regional GDP per capita. The outcomes suggest that financial access may help improve the level of regional economic development. One interpretation of the outcome may be that a dense bank distributional channel within a region facilitates households and businesses to better engage in the economy by having better access to financial services such as payment systems, loans, and savings. Household and businesses having better access to finance will engage more in economic activities, increasing their output and income.

Our analysis thus provides preliminary evidence of a strong and statistically significant positive association between access to financial services and the level of

Table 8.4 Generalized least squares (GLS) panel regression result

	Dependent variable: GDP regional/capita (constant price), random effect GLS regression	
Explanatory variables	Est (β)	$P > \|z\|$
Intercepts	−9.23E − 16	1.000
Bank per km^2 area	0.36028	0.001***
Human development index	0.29098	0.000****
Open unemployment rate	−0.05377	0.000****
Sigma_u		0.78721
Sigma_e		0.06388
Rho		0.99345
R^2 within	0.5694	
Between	0.4136	
Overall	0.4145	
Number of observations	165	
Number of groups	33	
Observation per group	5	
Prob > chi^2	0.000	

Source: Authors

This table shows a representative sample of Generalized Least Squares Regressions relating the Gross Domestic Product (GDP) Regional per capita to financial access at the provincial level. *** and **** indicates significance at the 1% and 0.1% levels, respectively. Dependent variable is the Regional GDP per capita. The main explanatory variable is financial access (bank per km^2). The total number of observations is 165. Prob > chi^2 informs us weather the model as a whole is significant. Sigma_u is the standard deviation of residuals within groups u_i and sigma_e shows the standard deviation of residuals (overall error term). In addition, Rho shows the intraclass correlation. STATA reports three R^2 measures: within R^2 (0.5694), R^2 between (0.4136), R^2 overall (0.4145). Values for the three R^2 may be compared, but it is unnecessary in a panel model.

regional GDP per capita. We demonstrate this relationship over and above controls for the general economic and development state in the Indonesian regions.

8.5 Conclusion

The literature argues that financial inclusion is critical for inclusive growth. In this chapter, the aim was to assess the relationship between financial inclusion and economic level of development at the regional level, using the geographical context of Indonesia as an example. This empirical evidence is beneficial to enhance our understanding of the pivotal role of financial inclusion for achieving inclusive growth at the regional level.

First, from the international comparison, the descriptive statistics suggest that a growing financial sector is beneficial for the economy. However, it is not strongly and consistently related to an increase of per capita welfare, arguably due to the absence of financial inclusion. Second, our panel data analysis suggests preliminary evidence of a significant association between financial inclusion and economic level of development at the regional level. In particular, our analysis shows that financial access, that is the number of bank branches per km^2, is associated with regional per capita economic output in Indonesia, controlling for the general development state and the economic situation.

As described in Sect. 8.4, the government of Indonesia has started to implement financial inclusion policies. It introduced various financial reforms that aimed at stimulating the growth and performance of the financial system. One particular aim was to increase the stability of the banking system. Next to these policies directed at the formal banking system, the government also actively aimed at supporting the development of microfinance. One example is the BRI, a state-owned bank specializing in providing financial services to the lower end of the market. Although the government made several efforts to enhance the development of the financial system, financial inclusion in Indonesia still lags behind that of most of the other Asian countries.

Expanding financial inclusion thus remains a formidable challenge in Indonesia. Policies that aim at further increasing the bank branch density in the country, especially in areas outside Java and Sumatra, would be welcome. Moreover, better informing low-income households about the advantages and opportunities to make use of financial services could help to enhance financial inclusion. In addition, policy makers could begin to think about how to implement less restrictive regulations for the poor to demand financial services, without endangering the stability of the banking system. Finally, financial service providers could be stimulated to reduce the costs of their services and develop services that cater to the special needs of the poor. The use of technological innovations, such as mobile banking and other types of ICT-based service provision could play an important role in this respect.

What kind of barriers is most important for the poor in remaining unbanked? What kind of financial services do they need? How can financial regulations be adjusted so that the poor can be better served without risking instability of the financial system? These are all important questions that need to be answered for the government to develop credible policy initiatives. Further empirical research on the relationship between financial inclusion and inclusive growth, and the exact nature of this relationship, is needed to support such policy initiatives.

References

Aghion, P., & Bolton, P. (1997). A theory of trickle-down growth and development. *The Review of Economic Studies, 64*(2), 151–172.

Ali, I., & Son, H. H. (2007). *Defining and measuring inclusive growth: application to the Philippines* (No. 98). ERD working paper series.

Ali, I., & Zhuang, J. (2007). *Inclusive growth toward a prosperous Asia: Policy implications* (No. 97). ERD Working Paper Series.

Allen, F., Demirgüç-Kunt, A., Klapper, L., & Peria, M. S. M. (2016). The foundations of financial inclusion: Understanding ownership and use of formal accounts. *Journal of Financial Intermediation, 27*, 1–30.

Anand, R., Mishra, M. S., & Peiris, S. J. (2013). *Inclusive growth: Measurement and determinants* (No. 13–135). International Monetary Fund.

Barr, M. S. (2004). Banking the poor. Yale *Journal on Regulation, 21*, 121–238.

Barr, M. S., Kumar, A., & Litan, R. E. (Eds.). (2007). *Building inclusive financial systems: A framework for financial access*. Washington, DC: Brookings Institution Press.

Beck, T., & De La Torre, A. (2007). The basic analytics of access to financial services. *Financial Markets, Institutions & Instruments, 16*(2), 79–117.

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007a). Finance, inequality and the poor. *Journal of Economic Growth, 12*(1), 27–49.

Beck, T., Demirgüç-Kunt, A., & Peria, M. S. M. (2007b). Reaching out: Access to and use of banking services across countries. *Journal of Financial Economics, 85*(1), 234–266.

Berg, A., & Ostry, J. D. (2011). *Inequality and unsustainable growth: Two sides of the same coin?* IMF Staff Discussion Note 11/08, Washington, DC.

Cihak, M., Demirgüç-Kunt, A., Feyem, E., Levine, R. (2013) *Financial development in 205 economies, 1960 to 2010*. Working Paper National Bureau of Economic Research.

Dabla-Norris, E., Deng, Y., Ivanova, A., Karpowicz, I., Unsal, F., VanLeemput, E. and Wong, J. (2015a). Financial inclusion: zooming in on Latin America.

Dabla-Norris, M. E., Kochhar, M. K., Suphaphiphat, M. N., Ricka, M. F., & Tsounta, E. (2015b). *Causes and consequences of income inequality: A global perspective*. International Monetary Fund.

Demirgüç-Kunt, A., Beck, T., & Honohan, P. (2008). *Finance for all?: Policies and pitfalls in expanding access* (A World Bank policy research report). Washington, DC: World Bank.

Demirgüç-Kunt, A., & Klapper, L. (2013). Measuring financial inclusion: Explaining variation in use of financial services across and within countries. *Brookings Papers on Economic Activity, 2013*(1), 279–340.

Demirgüç-Kunt, A., Klapper, L. F., Singer, D., & Van Oudheusden, P. (2015). *The global findex database 2014: Measuring financial inclusion around the world*.

Ductor, L., & Grechyna, D. (2015). Financial development, real sector, and economic growth. *International Review of Economics & Finance, 37*, 393–405.

Ekberg, J., Chowduri, R., & Soejachmoen, M. P. (2015). *Financial deepening in Indonesia*. Jakarta: Mandiri Institute and Oliver Wyman.

Financial Service Authority Republic Indonesia: Data and Statistics for Indonesia Banking Statistics. (2016). https://www.ojk.go.id/en

Galor, O., & Moav, O. (2004). From physical to human capital accumulation: Inequality and the process of development. *The Review of Economic Studies, 71*(4), 1001–1026.

Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. *The Review of Economic Studies, 60*(1), 35–52.

Ghatak, M. (1999). Group lending, local information and peer selection. *Journal of Development Economics, 60*(1), 27–50.

Glaeser, E. L., Laibson, D. I., Scheinkman, J. A., & Soutter, C. L. (2000). Measuring trust. *The Quarterly Journal of Economics, 115*(3), 811–846.

Gopalan, S., & Kikuchi, T. (2016). *Financial inclusion in Asia*. London: Palgrave Macmillan.

Hermes N, Lensink R, Meesters A., 2009. Financial Development and The Efficiency of Microfinance Institutions. SSRN Electronic Journal, pp.1–29. Available at: SSRN: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1396202

Honohan, P. (2008). Cross-country variation in household access to financial services. *Journal of Banking & Finance, 32*(11), 2493–2500.

Hsiao, C. (2007). Panel data analysis—Advantages and challenges. *TEST, 16*(1), 1–22.

Hulme, D. and Mosley, P. (1996). Finance against Poverty, 1 and 2. Routledge, London.

Indonesia Central Bureau Statistics. (2016). https://www.bps.go.id/

Karpowicz, M. I. (2014). *Financial inclusion, growth and inequality: A model application to Colombia* (No. 14-166). International Monetary Fund.

Kempson, E., Atkinson, A., & Pilley, O. (2004) *Policy level response to financial exclusion in developed economies: Lessons for developing countries*. Report of Personal Finance Research Centre, University of Bristol.

Khan, M. H. (2012). The political economy of inclusive growth. In L. de Mello & M. A. Dutz (Eds.), *Promoting inclusive growth: Challenges and policies* (pp. 15–53). Paris: OECD Publishing.

Kikkawa, K., & Xing, Y. (2014). 3 Financial inclusion in Indonesia: A poverty alleviation strategy. *Financial Inclusion in Asia*, p. 45.

Kraay, A. (2004). *When is growth pro-poor? Cross-country evidence*. IMF Working Paper No. 04/47, Washington, DC.

Kumar, A. (2005). Assessing financial access in brazil (Ser. World bank working paper, no. 50). World Bank.

Kumar, A., et al. (2005b). Indicators of Financial Access: Household-Level Surveys. Policy Note. Washington: World Bank.

Levine, R. (1997). Financial development and economic growth: Views and agenda. *Journal of Economic Literature, 35*(2), 688–726.

Levine, R. (2005). Finance and growth: Theory and evidence. *Handbook of Economic Growth, 1*, 865–934.

Leyshon, A., French, S., & Signoretta, P. (2008). *Financial exclusion and the geography of bank and building society branch closure in Britain.* Royal Geographical Society.

Liu, W. C., & Hsu, C. M. (2006). The role of financial development in economic growth: The experiences of Taiwan, Korea, and Japan. *Journal of Asian Economics, 17*(4), 667–690.

Nasution, A. (1998). The meltdown of the Indonesian economy in 1997-1998: Causes and responses. *Seoul Journal of Economics, 11*(4), 447.

Park, C.-Y., & Mercado, R. (2018). Financial inclusion, poverty, and income inequality. *Singapore Economic Review, 63*(1), 185–206. https://doi.org/10.1142/S0217590818410059

Petri, P. A., Institute of Southeast Asian Studies and Pacific Economic Cooperation Council, & Taskforce on the Global Economic Crisis. (2010). *Inclusive, balanced, sustained growth in the Asia Pacific*. Singapore: Institute of Southeast Asian Studies.

Porteous, D. (2007). *Financial service access and usage in southern and East Africa: What do FINSCOPE surveys tell us?* FinMark Trust. Retrieved from http://www.finscope.co.za/documents/2007/CrossCountryreport.pdf

Rajan, R. G., & Zingales, L. (1998). Financial dependence and growth. *The American Economic Review, 88*(3), 559–586.

Rajan, R. G., & Zingales, L. (2003). The great reversals: the politics of financial development in the twentieth century. *Journal of Financial Economics, 69*(1), 5–50. https://doi.org/10.1016/S0304-405X(03)00125-9

Robinson, M., & World Bank. (2002). *The microfinance revolution: Lessons from Indonesia*. Washington, DC: World Bank (World Bank e-Library).

Ruiz, J. L. (2017). Financial development, institutional investors, and economic growth. *International Review of Economics & Finance, 54*, 218–224.

Sarma, M., & Pais, J. (2011). Financial inclusion and development. *Journal of International Development, 23*(5), 613–628.

Sehrawat, M., & Giri, A. K. (2015). The role of financial development in economic growth: Empirical evidence from Indian states. *International Journal of Emerging Markets, 10*(4), 765–780.

Sehrawat, M., & Giri, A. K. (2016). Financial development, poverty and rural-urban income inequality: Evidence from South Asian countries. *Quality & Quantity, 50*(2), 577–590.

Shahbaz, M., Loganathan, N., Tiwari, A. K., & Sherafatian-Jahromi, R. (2015). Financial development and income inequality: is there any financial kuznets curve in iran? Social Indicators Research : An International and Interdisciplinary *Journal for Quality-Of-Life Measurement, 124*(2), 357–382. https://doi.org/10.1007/s11205-014-0801-9

Statistical Yearbook of Indonesia. (2016). Directorate General of Regional Authority, Ministry of Home Affairs Republic of Indonesia

Wooldridge, J. M. (2009). *Introductory econometrics. A modern approach* (4th ed.). Mason, OH: South-Western Cengage Learning.

World Bank. (2009). *Financial infrastructure: Building access through transparent and stable financial systems*.

World Bank. (2014a). *Financial inclusion*. Global Financial Development Report.

World Bank. (2014b). *Global financial inclusion index database 2014*

World Bank. (2015). World Bank DataBank. https://databank.worldbank.org/home.aspx

World Bank. (2016). World Bank Annual Report 2016.

Zhuang, J., & Asian Development Bank. (2010). *Poverty, inequality, and inclusive growth in Asia: Measurement, policy issues, and country studies*. London: Anthem Press.

Zins, A., & Weill, L. (2016). The determinants of financial inclusion in Africa. *Review of Development Finance, 6*(1), 46–57.