The Financial Inclusion and Its Impact on Society Welfare in Indonesia

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Abstract: This study aims to analyze the level of financial inclusion and its impact on the welfare of society in Indonesia using provincial data for 2015-2018. The method used is based on the dimensions of accessibility, availability, and use of financial services developed by Sarma (2012) to calculate the Index of Financial Inclusion (IFI) and the generalized least square (GLS) method for estimating panel data. The analysis shows that financial inclusion in Indonesia is determined by the dimensions of the use and availability of financial services, while the dimensions of accessibility have a relatively small proportion. Based on the financial inclusion index, there are 25 provinces included in the category of low financial inclusion, 8 provinces included in the medium category, and only DKI Jakarta Province included in the category of high financial inclusion. Meanwhile, the panel data estimation results show that the financial inclusion index has a positive and significant effect on the welfare of the Indonesian people, which is proxied by the human development index.

1 INTRODUCTION

Since the 2000s, financial inclusion has been widely used as the main focus of policy in many countries and central banks, to accelerate the development process. Many empirical studies show a significant relationship between strengthening the financial sector, especially formal finance with economic growth and improving people's welfare. This is because the financial system can reduce information costs and transaction costs, increase the allocation of capital and asset liquidity, and can encourage investment in activities that have high added value (Levina, 2007).

To achieve these objectives, must be supported by a good financial system. Because, a good financial system will play an important role through the intermediation function. The role of banks as intermediaries cannot yet be said to be successful when the availability of access and financial services is inadequate. This can be seen from the size of the financially excluded population. According to Mohan (2006), financial exclusion signifies lack of access in the accuracy, affordable costs, fair and safe financial products and services of service providers. The causes of financial exclusion or low use of formal financial products and services include the limited access to financial service products and services, the socio-cultural community, and the low level of financial literacy (OJK, 2016).

The availability of financial services and ease of access is one of the important aspects to enhance the role of the financial sector and public involvement in the economic system in a country. How big is the opportunity for the community to be able to access and use financial services that can reflect the level of financial inclusion in an economy.

Based on the results of surveys and research conducted by national and international institutions, it shows that financial inclusion in Indonesia is still relatively low compared to several countries in ASEAN. According to the global financial inclusion index made by the World Bank (2015), only about 40 percent of Indonesians have access to formal financial institutions and this condition is still lower than Thailand and Malaysia, which almost reached 80 percent.

OJK survey results (2016) are quite encouraging, where the level of financial literacy has increased from 21.84 percent in 2013 to 29.66 percent in 2016. While the financial inclusion rate also improved from 59.74 percent to 67.82 percent in same period. This shows that financial inclusiveness in Indonesia is still

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low and mutually supportive that Indonesian people's financial access to formal financial institutions is still relatively low so that Indonesia's population still has limited access to the financial services system. Therefore, given the very important role of financial inclusion as an effort to accelerate the process of economic development in Indonesia, studies related to financial inclusion and its impact on the welfare of the community are interesting to study.

2 LITERATURE REVIEW

In Indonesia, financial inclusion or financial inclusion becomes a national strategy to encourage economic growth through equitable distribution of income, poverty reduction, and financial system stability (Hadad, 2010). The right of every individual is guaranteed to be able to access the entire range of quality financial services at an affordable cost. The target of this policy is very concerned about the poor low-income, productive poor people, migrant workers, and people living in remote areas (Bank Indonesia, 2014).

Regarding financial inclusion, Bank Indonesia (2014) defines financial inclusion as an effort to increase public access to financial services by removing all forms of barriers both price and non-price. Hannig and Jansen (2010) revealed that financial inclusion is an effort to include unbankable people in the formal financial system so that they have the opportunity to enjoy financial services such as savings, payments, and transfers.

In addition, according to Sarma (2012) financial inclusion is a process that guarantees the ease of access, availability, and benefits of the formal financial system for all economic actors. So it can be concluded that financial inclusion is an effort to increase public access, especially unbankable people, into formal financial services by reducing various kinds of obstacles to access them.

The results of research conducted by Hannig and Jansen (2010) found that financial inclusion in addition to addressing income inequality also has the potential to improve financial stability. This is because poor people's access to savings from formal financial institutions can increase the capacity of households to manage financial vulnerability caused by the adverse effects of the crisis, diversify the funding base of financial institutions that can reduce shocks during a global crisis, increase economic resilience by accelerating growth, facilitating diversification, and reducing poverty.

Meanwhile, related to research on the impact of financial inclusion on development has been carried out by Sarma and Pais (2011) using the OLS method and the results of his study found that the level of human development and financial inclusion has a positive relationship for several countries in the world. While the results of the study by Gupta et. al. (2014), which measures the Index for Financial Inclusion (IFI) in 28 states and 6 regions in India using dimensions of penetration, availability and usage of banking services, empirically found that financial inclusion indexes and human development index as a proxy for people's welfare in India have positive relationship (correlation).

3 METHOD

3.1 Data and Variables

This study uses panel data for the period 2015-2018 at 34 provinces in Indonesia sourced from the Central Statistics Agency (BPS), the Financial Services Authority (OJK), and Bank Indonesia (BI). This study uses the Index of Financial Inclusion (IFI) method developed by Sarma (2012) in analyzing and measuring financial inclusion in Indonesia. The research variables used refer to the IFI measurement dimensions, namely accessibility (d1), availability (d2), and usage (d3). Related to the analysis of the impact of financial inclusion on welfare proxied by the human development index (HDI), this study uses several variables as control variables, namely the number of poor people (PM) and population density (KP). For operational definitions of all these variables are as table 1.

3.2 Analysis Method

This study adopts the measurement Index of Financial Inclusion (IFI) developed by Sarma (2012), in which to calculate Index of Financial Inclusion (IFI) using three dimensions, namely accessibility (d1), availability (d2), and the of (d3). Accessibility indicators illustrate the penetration of formal financial institutions and availibilitas indicator is indicated by the number of bank branches. While the usage indicators include the volume of bank lending to the public. This method is used because it provides a robust and comprehensive measurements can be compared between provinces.

Furthermore, this study also uses Data panel to see the impact of financial inclusion on the welfare of society, proxied by human development index using

Table 1. Definitions and indicators variable operational research

No.	Variables	Definition	Indicator
Calculation of Financial Inclusion Index (IFI)			
1	Accessibility (d1)	Measuring banking penetration through the many users of banking services	The ratio of the number of bank accounts per 1,000 total population of adults. d_1=(Amount of Bank Account)/(Amount of Adults)
2	Availability (d2)	Measuring ability in the use of formal financial services	The ratio of the number of bank service offices per 100,000 adult population number. d_2=(Amount of Bank Office)/(Amount of Adults)
3	The use (d3)	Measuring the extent of use of banking services by the community through financing	The ratio of the amount of financing provided banking to the regional gross domestic product (GDP) in billion Rupiah. d_3=(Amount of Bank Financing)/PDRB
Calculating the Impact of Financial Inclusion of the Public Welfare			
1	Index of Financial Inclusion (IFI)	The index value calculation results of financial inclusion among the provinces in Indonesia	
2	Human Development Index (HDI)	The value of the human development index among the provinces in Indonesia as a proxy to measure the level of social welfare	

Source: Sarma (2012), BI and CPM

Generalized Least Square (GLS). The research model specification is:

$$IPM_{it} = \alpha_0 + \alpha_1 IFI_{it} + \alpha_2 PM_{it} + \alpha_3 KP_{it} + \mu_{it} \qquad (1)$$

HDI is Human Development Index, IFI is Index of Financial Inclusion, the PM is the number of poor, and KP is Population Density.

This GLS method can be analyzed through two models, namely the fixed effects model (FEM) and the random effects model (REM). Furthermore, from the two models, the best model was chosen by conducting the Hausman test (Gujarati, 2008). The condition is that if the null hypothesis (H0) is accepted, the model used is the random effect model (REM). Conversely, if the null hypothesis (H0) is rejected, the model used is the fixed effect model (FEM). To process the data in this study, Eviews Program version 10 was used.

4 RESULTS AND DISCUSSION

4.1 Index of Financial Inclusion (IFI) in Indonesia

Based on the average value of the Index of Financial Inclusion (IFI), Indonesia is included in the category of "moderate" financial inclusion because, having an average value of the financial inclusion index above 0.3 during the study period. For the grouping between provinces in Indonesia, there are 25 provinces that fall

into the category of "low" financial inclusion (index values below 0.3). While there are 8 provinces that are included in the category of "moderate" financial inclusion (index value between 0.3-0.6). Only DKI Jakarta Province is included in the high financial inclusion category (index value above 0.6, that is, 0.9052).

Provinces in the category of medium financial inclusion index are Riau Islands Province, DI Yogyakarta, Banten, Bali, East Nusa Tenggara, East Kalimantan, North Sulawesi, and West Papua Province. While the provinces in the category of low financial inclusion were 25 provinces with the lowest financial inclusion index, namely West Sulawesi (0.1782) and Lampung (0.1884).

The relatively low financial inclusion index in Indonesia shows that the distribution and utilization of banking services is still low. Likewise the difference in financial inclusion index between provinces in Indonesia also shows that there is still an imbalance or inequality for access to banking services between provinces. This condition occurs in the provinces of Banten, Bali, and North Sulawesi which have relatively high of the Index of Financial Inclusion (IFI) values but the index value of accessibility dimensions (IA) is relatively low. This indicates that there are still obstacles in the three provinces in terms of accessing banking institutions despite the relatively high availability and use of banking services.
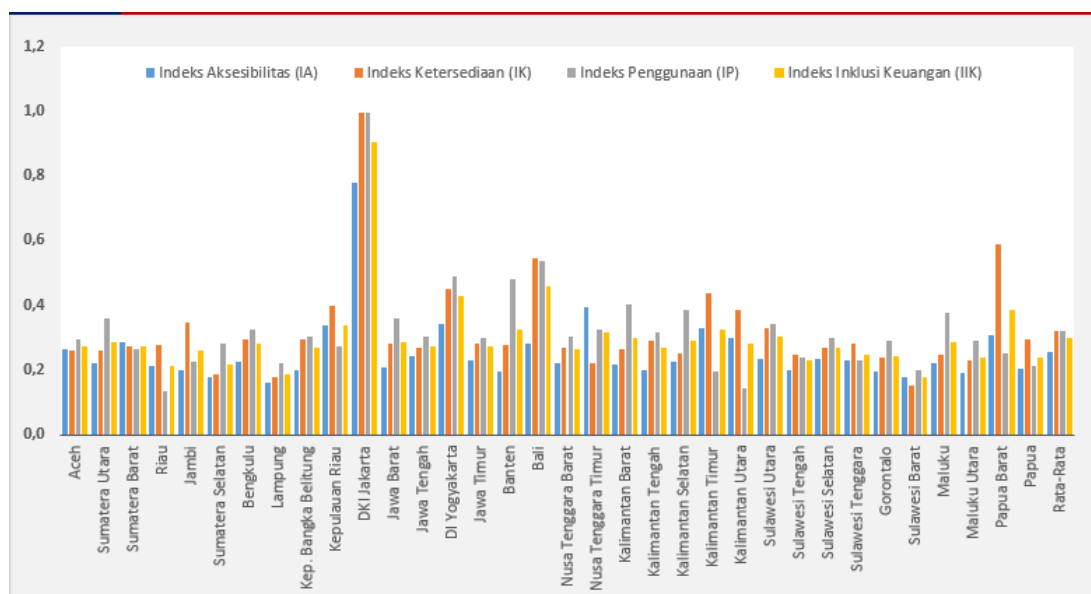
Source: Bank Indonesia & BPS (2019)

Figure1: The Average of Index of Financial Inclusion (IFI) on 3 dimensions in Indonesia

Meanwhile, there are also a number of provinces that have relatively high Index of Financial Inclusion (IFI) but the index of usage dimension (IP) is relatively low. This condition occurs in the Riau Islands, East Kalimantan and West Papua Provinces, which indicate that the use and use of banking services is not optimal, although the accessibility and availability of banking services are relatively good. This is because in the three provinces the number of adult residents who have accessed and used banking services is still relatively small but tends to have more than 1 bank account.

In addition, it was also found that the province had a relatively high index of financial inclusion index but the value of the index of the availability dimension (IK) of its banking services was relatively low and this occurred in the Province of East Nusa Tenggara (NTT). These findings indicate that in East Nusa Tenggara Province still faces the problem of the existence of limited bank branch offices in the regions.

However, there are two provinces that have a financial inclusion index value and a dimension index that tends to be relatively evenly distributed, namely DKI Jakarta Province and DI Yogyakarta Province. This shows that the people in the two provinces have a level of financial inclusion that tends to be evenly distributed, both in terms of the dimensions of accessibility, the dimensions of availability, and the dimensions of the use of banking services during 2015-2018. In contrast, provinces that have relatively low financial inclusion index values and dimensional indexes occur in Lampung Province and West Sulawesi Province. These findings indicate that people in these two provinces are still experiencing obstacles to accessing and utilizing and using banking services in the area.

Based on these findings, the average dimension of banking availability tends to be higher compared to the dimensions of banking accessibility or penetration. This means that the number of bank branch offices is relatively more, but the number of adult residents who have accounts is still very low. The low accessibility or penetration of banks can be made possible even though banks do not have many customers, but relatively few customers make transactions with relatively large volumes. The large transaction volume can be seen from the dimensions of usage that tend to be large.

In addition, these findings also prove that the low value of the accessibility dimension with the high value of the availability and usage dimensions indicates that the public has not optimally utilized formal financial services as the main source of financing. People are more likely to use informal financial services, such as cooperatives and moneylenders, rather than formal banking facilities. The dominant role of non-formal financial institutions in Indonesia, especially in remote areas shows that the formal financial market in Indonesia is not functioning properly.

4.2 Panel Data Estimation Results

To see the effect of financial inclusion in the welfare of society proxied by the human development index (HDI), the estimate for the panel data methods is Generalized Least Squares (GLS), Here are the results estimated using GLS for fixed effect model (FEM) and random effect model (REM) as shown in the table 2.

Table 2: Estimation results using the GLS Method.

Dependent Variable: Welfare (LIPM) 2015-2018				
Independent Variable	FEM	Prob.	REM	Prob.
C	25.662	0.0000	42.690	0.0000
IIK	0.0898	0.0000	0.1449	0.0000
LPM	-0.0366	0.0021	-0.0422	0.0000
LKP	0.3848	0.0000	0.0375	0.0000
Adj. R^2	0.9914		0.4498	
Fstat	434.66		37.791	
DW$_{test}$	13.910		0.9102	

Furthermore. to choose the best statistical model between FEM and REM models for the Generalized Least Square (GLS) method. it can be done by Hausman test (Gujarati. 2008) and the results can be seen based on the chi-square value as shown in the table 3.

Table 3: The results of Hausman Test.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	149.13899	3	0.000

Based on the Hausman test results in table 3. the chi-square value of 149.139 was obtained with a probability value of 0.0000 which means the null hypothesis (H0) was rejected. Thus. the best model in this study is the fixed effects model (FEM). From the estimation results with FEM model shows that the coefficient of determination (R2) of 0.9914 which means that overall the independent variables in the model (IFI. PM. KP) are quite able to explain variations in public welfare (HDI) in Indonesia of 99.14 percent and the rest are explained by other variables not contained in the equation model.

Table 4: Estimation results using Fixed Effects Model (FEM).

Depvar: LIPM	FEM	t-stat
C	25.662	13.611
IIK	0.0898	6.053***
LPM	-0.0366	-3.160***
LKP	0.3848	12.115***
Adj. R^2	0.9914	
Fstat	434.66	
DW$_{test}$	13.910	

Note: *** significant at $\alpha = 0,01$

The estimation results in table 4 show that the Index of Financial Inclusion (IFI) has a positive and significant impact on the level of community welfare (HDI) in Indonesia at a 99% confidence level. The coefficient value of 0.089 indicates that every time there is an increase in the financial inclusion index in Indonesia by 1 point, ceteris paribus, it will increase the welfare of the Indonesian people by 0.089 points. These empirical results support a study by Sarma and Pais (2011), where the level of human development and financial inclusion has a positive relationship for several countries in the world. Likewise the results of research conducted by Gupta et. al. (2014) where the index of Financial Inclusion and the Human Development Index as a proxy for community welfare in India have a positive correlation.

The estimation results on the variable number of poor people (PM) show a negative and significant effect on the level of community welfare (HDI) in Indonesia at a 99% confidence level. The coefficient value of 0.037 means that every 1% increase in the number of poor people in Indonesia, ceteris paribus, will cause the level of welfare of the Indonesian people to decrease by 0.037 points. While the population density variable (KP) has a positive and significant effect on the level of community welfare (HDI) in Indonesia at a 99% confidence level. The coefficient value of 0.385 indicates that every time there is an increase in population density in Indonesia by 1 point, ceteris paribus, it will result in an increase in the welfare of the Indonesian people by 0.385 points. The results of this estimation are not in line with the hypothesis which states that there is a negative and significant effect between population density and the level of social welfare in Indonesia.

5 CONCLUSIONS

The results of this study indicate that Indonesia in the category of financial inclusion index was during the study period. Generally. financial inclusion in

Indonesia tends to be determined by the dimensions of use and availability. while the dimensions of accessibility has a relatively smaller proportion. Proportion of dimensions of use in supporting financial inclusion in Indonesia is shown by the ability of people to take advantage of and use of banking services as savings and financing sources.

For the dimensions of availability (availability) may be indicated by the increasing number of branches existing banking area but the existence of the branch office has not been able to serve all existing community area. This condition causes the dimensions of accessibility has a lower index value than the other dimensions and limitations of this accessibility that makes many people still can not access due to geographic barriers banking Indonesian archipelago so the cost is relatively expensive establishment of branch offices.

Furthermore. based on the results of the panel data estimates show that variabel Index of Financial Inclusion (IFI) positive and significant impact on the level of social prosperity proxy for the human development index (HDI). Likewise the population density variable (KP) positive and significant impact on the level of welfare in Indonesia. While variable number of poor (PM) a significant negative effect on the level of welfare in Indonesia during the study period.

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