The Impact of Financial Inclusion on Economic Growth in Indonesia: Panel Data 34 Province

Purwiyanta, C Ambar Pujiharjanto, Rini Dwi Astuti

Universitas Pembangunan Nasional Veteran Yogyakarta,
[1] E-mail address purwiyanta@upnyk.ac.id; [2] E-mail address ambar.pujiharjanto@upnyk.ac.id; [3]E-mail address rinidwiastuti@upnyk.ac.id

Abstract

Financial inclusion is a significant phenomenon that needs the attention of policymakers around the world in planning strong policies to achieve sustainable growth. Most studies focus on access to finance or financial depth or a combination thereof. This study develops previous studies by looking at three aspects of financial inclusion: access, depth, and stability. This study aims to analyze the effect of financial depth, financial access, and financial stability on economic growth in 34 provinces in Indonesia for the 2014-2018 period. Based on the Fixed Effect Model of panel data, the results indicated that all financial inclusion variables used in this research affected economic growth. Financial depth and stability have a positive effect, while access to finance has a negative effect. This shows the validity of the paradox of thrift in Indonesia.

Keywords: inancial inclusion, economic growth, panel data

I.   INTRODUCTION

A healthy and dynamic economy needs a financial system that transfers funds efficiently from surplus spending unit whose have excess funds to deficit spending unit with lack of funds but have investment opportunities productively (Mishkin, 2016). The financial sector can mobilize public savings through banking to borrowers. This will indirectly increase investment and ultimately accelerate economic growth. The existence of asymmetric information, which is represented with high costs of transaction and information in financial markets, can be dampened by the efficiently financial sector functions. Therefore, government policy should be aimed at boosting the financial system.

Financial inclusion is a significant phenomenon for policymakers around the world to plan strong policies in order to achieve sustainable development. In a theoretical framework, it has been discussed that it is a driving force towards economic growth (Bakar & Sulong, 2018). Schumpeter's previous argued has shown that the financial sector promotes growth. These depend on the role of financial markets in setting interest rates, and increasing financial services demand to fosters performance improvements between banks ensures an increase in saving and investment as well as the economy (Schumpeter, 1911; Goldsmith, 1969; Mckinnon, 1973).

Research by Okoye et al. (2017) shows that bank credit cannot drive growth in Nigeria. Otherwise, the financial sector is admitted as a precondition for growth and poverty alleviation (Chibba, 2009). Thus, it is necessary to pay attention to the specific dynamics of financial inclusion issues. This

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demands the need to study financial inclusion on a narrower basis than on a broader basis. In many developing countries, economic development tends to favor the wealthy few and regions, while other populations and regions tend to be left behind. Financial inclusion is needed for rural areas and minorities as engines of future economic growth (Agarwal, 2010). In Indonesia, most studies concern with access to finance (Sanjaya & Nursechafia, 2016; Santoso & Meera, 2017; Aginta, et.al, 2018), as well studies in many countries (Aduda & Kalunda, 2012; Hariharan & Marktanner, 2012; Sarma & Pias, 2011; Ogege & Boloupremo, 2014; Guney & Demiral, 2019; Suidarma, 2019). Many other studies look only at the aspect of financial depth (Honohan, 2008; Babajide et al., 2015; Okoye et al., 2017). This study will undertake the development of the previous research by using a variable financial inclusion that includes three aspects: financial depth, access to finance, and financial stability. Financial stability is related to the risks faced by banks, which may affect the role of banking intermediation and sustainable economic growth.

II. LITERATURE REVIEW

The relationship between the financial sector and real sector activities can be investigated through Smith (1776), who argues that real growth in an economy is driven by the activities of the financial system. These increased resources facilitate increased production and specialization. Financial inclusion is defined as the proportion of people and firms using financial services. Multiple people can access financial services at affordable prices. However, some may prefer to use or not certain financial services. In contrast, many others may not have access to these services due to their limited costs, or because of legislative barriers, legal difficulties, or cannot use services due to a mix of market and cultural phenomena. The tipping point here is the lack of financial inclusion, how much there is less demand for financial services, or how much it is due to barriers preventing individuals and companies from accessing financial services (World Bank, 2014).

Inclusive financial systems appear attractive for many excuses. It can facilitate the allocation of productive resources efficiently, improve access to appropriate financial services, and significantly improves financial management; inclusive financial systems often help diminish the growth of informal credit that tends to be exploited (Sarma, 2008). Empirical evidence exists that proves financial inclusion has a positive effect on growth and development in an economy because it increases the asset (Oanolapo, 2015). To reach the target of inclusive growth with equity, commercial banks must promote financial inclusion through cost-effective and affordable technologies such as bank accounts without minimum balance requirements and technology advances (Basant, 2011).

Sharma (2016) argued that financial inclusion could further grow in India. Ghimire and Giorgioni (2013) investigated that bank financing has a negative effect on short-term growth, similar to previous studies and that the domestic securities market and finance have no significant effect on growth. Yorulmaz (2012) conducted a study using provincial data in Turkey for 2004-2010. The results of the study found that the ratio of financial access calculated at the regional and provincial levels affects regional and provincial growth. Bruhn and Love (2014) showed the effect of financial access on poverty through the Banco Azteca bank, which opened 800 bank branches in Mexico and opened nearly 800 banks at the same time, focusing primarily on low-income clients. As a result of the research, it can be observed that opening a bank resulted in a 7.6% increase in informal business statistics, no change informal employment statistics, and an increase in the income level of 7% in 2 years. On the other hand, the unemployed individual unemployed rate decreased by 1.4%, and the G.D.P. per capita growth rate increased.

Research on financial inclusion in Indonesia is dominated by studies on how access to finance can drive economic growth. Financial inclusion in Indonesia is greatly affected by the dimension of accessibility (Sanjaya & Nursechafia, 2016). Financial inclusion will reduce income inequality if

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local economic conditions can support the community to financial access for productive activities (Aginta, et al., 2018). The achievement of financial inclusion in Indonesia reaches 32%. This means 68% of the poor are not reached by financial services, while the world average is only 50%. Then the poverty rate in Indonesia is 59%. Therefore, Financial Inclusion is very urgent for Indonesia to solve this problem (Santoso & Meera, 2017).

III. RESEARCH METHODOLOGY

Data is panel data consisting of 34 provinces in Indonesia and the 2014-2018 time series, with 170 observations. The regression model estimation using panel data. The panel data model in this study is to modify the model of Rewilak (2017) as follows:

$$Growth = \beta_0 + \beta_1 KK_{it} + \beta_2 AK_{it} + \beta_3 SK_{it} + e_{it}$$

Growth = Economic growth, measured by the growth of GRDP constant price

K.K. = financial depth, measured by the ratio of credit to the private sector to GRDP

AK   = Access to Finance, measured by the ratio of total public savings to GRDP

SK   = Financial stability, measured by the ratio of non-performing loans

i   = province

t   = quarterly time period

There are three models in the analysis panel data, namely the common model effects, fixed effects, and random effects. The difference in this model lies in its constant value. The common model effects do not accommodate differences in the characteristics of each unit, so the model is the same as the model ordinary least square (O.L.S.). Model Fixed effects and random effects have accommodated different characteristics of each unit, only for the model fixed effects that do not contain random variables (interference). In contrast, the random-effects model contains the influence of random variables (interference). If there are differences in the characteristics of each unit, the correct model as fixed effects and random effects. To determine whether the model is better between fixed effects and random effects, the can be used Hausman Test. The Hausman test hypothesis that will be tested is (Gujarati, 2012):

$H_0 = \alpha_i$ does not correlate with the independent variable (random effects)

$H_a = \alpha_i$ correlates with the independent variable (fixed effects)

If the value of h2 count is smaller than the value χ^2 tables, then accept Ho, which means that the correct model as random effects. Conversely, if χ^2 count is greater than the value of χ^2 table, then it rejects Ho, which means that the correct model as fixed effects.

IV. FINDING AND DISCUSSION

1) IV.1. Panel Data Model Testing

 2) The Chow test determines the fixed or common effect that is the most fitted model in panel data. The value for Prob. Chi-square cross-section <0.05, then we will choose the fixed effect over the common effect.

Table 1 Chow Test Results

Redundant Fixed Effects Tests		
Equation: EQ01		
Test cross-section fixed effects		

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Effects Test	Statistic	d.f.	Prob.
Cross-section F	325.188685	(33,129)	0.0000
Cross-section Chi-square	735.886309	33	0.0000

The value of Prob. The Chi-Square Cross Section is 0.000 <0.05, so the model we choose is the fixed effect. The next step is to test the random effect and fixed effect using the Hausmann Test (Table 2).

Table 2. HausmanTest Results

Correlated Random Effects- Hausman Test			
Equation: EQ01			
Cross-section random effects			
test Summary	Chi-Sq.statistics	Chi-Sq. df	Prob.
Random cross-section	17.125549	3	0.0007

The value of Random Cross Section Probability is 0.0007, less than 0.05, so it can be concluded that H1 is accepted, so the most appropriate model in panel data analysis is the model fixed effect.

IV.2. Panel Data Model Analysis

Financial inclusion is a factor affecting economic growth in Indonesia. Credit to the private sector can stimulate the economy through investment. Thus, in order to boost economic growth in Indonesia through strengthening financial inclusion, several supporting policies are needed. The process of submitting and approving credit must be simplified without reducing the principle of prudence so that more funds can be used to finance investment.

Table 3. Fixed Effect Model

Dependent Variable: GROWTH			
Method: Panel Least Squares			
Total panel (unbalanced) observations: 166			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	12.33414	0.087910	140.3036	0.0000
KK	0.002275	0.000798	2.852551	0.0051
AK	-0.021048	0.002550	-8.254293	0.0000
SK	0.021517	0.009577	2.246690	0.0264
	Effects Specification		
Cross-section fixed (dummy variables)			
R-squared	0.989587	Mean dependent var	11.78719
Adjusted R-squared	0.986681	S.D. dependent var	1.163464

Suidarma (2019) states that the increasing number of automatic teller machines and the number of branch offices will increase the amount of savings and deepen financial inclusion. However, if this increase in savings is not accompanied by an increase in credit distribution by banks, it will have a contractionary impact on the economy. Savings are a component of leakage in the national income circular flow (Mankiw, 2010). The higher the savings that cannot be distributed to productive activities can cause a decrease in output. This is what is called the paradox of thrift (Sukirno, 2004). Therefore, the role of banking intermediation must continue to be improved so that public savings can be drained into the productive sector. Excess banking liquidity can also be dispensed to banks with low bank liquidity so that more funds can be used for investment.

Financial stability can be achieved through the reduction of asymmetric information, adverse selection, dan moral hazard (Mishkin, 2016). Non-performing loans must be kept at a low level so

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as not to disturb the health of the banking system. Credit analysis is carried out by the terms and conditions to reduce credit risk.

V.   CONCLUSION AND FURTHER RESEARCH

This research is a further study of Sanjaya & Nursechafia (2016), where their research only focuses on access to finance without analyzing panel data using regional-based data to determine whether financial inclusion affects inclusive growth. This research also fills the research gap of Guney & Demiral (2019) and Suidarma (2019), which have not included aspects of financial depth and stability as in this study. The results of this study indicate that all aspects of financial inclusion, access, depth, and financial stability are capable of driving growth in 34 provinces in Indonesia.

 The financial depth variable has a positive impact on economic growth in 34 provinces in Indonesia. This means that an increasing proportion of the credit to the private sector, which can promote economic growth through increased investment. Access to finance has a negative effect on economic growth. These results indicate the validity of the paradox of thrift in Indonesia, where the increasing proportion of public savings to GRDP can cause a decrease in output because funds are not distributed to finance productive activities. Financial stability can encourage growth in 34 provinces in Indonesia for the 2014-2018 period. This occurs because non-performing loans in 34 provinces in Indonesia are still in the healthy category so that they do not interfere with economic growth.

Further research can be carried out using dynamic models so that the dynamics over time can be analyzed more deeply. The use of dynamic panel models and autoregressive models can be used. Deepening the analysis can also be done by adding other financial inclusion variables such as financial efficiency and variables outside the banking sector.

REFERENCES

Aduda, J. & Kalunda, E. (2012), Financial Inclusion and Financial Sector Stability with Reference to Kenya: A Review of Literature, Journal of Applied Finance & Banking, Vol. 2, No. 6, pp. 95-120.

Agarwal (2010), Financial Inclusion: Challenges & Opportunities, 23rd Skoch Summit 2010.

Aginta, H.; Soraya, D.A. & Santoso, W.B. (2018), Financial Development and Income Inequality in Indonesia: A Sub-national Level Analysis, Economics, and Finance in Indonesia, Vol. 64 No. 2, December, pp.111–130.

Babajide, AA, Adegboye, f. B., & Omankhanlem, AE (2015), Financial Inclusion and Economic Growth in Nigeria, International Journal of Economics and Financial Issues, pp. 629-637.

Bakar, H.O. & Sulong, Z. (2018), The Role of Financial Inclusion on Economic Growth: Theoretical and Empirical Literature Review Analysis, Journal of Business & Financial Affairs, Vol. 7, Issue 4, pp. 1-5.

Bassant, S. (2011), Profitable Models for Financial Inclusion, Compendium II; Layout 1, BANCON Review papers.

Bruhn, M. & Love, I. (2014), The Real Impact of Improved Access to Finance: Evidence from Mexico. Journal of Finance, Vol. 69, Issue 3, pp. 1347–1376.

Chibba, M (2009), Financial Inclusion, Poverty Reduction, and the Millennium Development Goals, European Journal of Development Research, Vol 2, pp. 213-230.

Ghimire, B., & Giorgioni, G. (2013), Finance and Growth: An Investigation into the Role of Internal, Bank and Equity Finance, Poznan University of Economics Review, Vol. 13, Issue 2, pp. 31–46.

Goldsmith, RW. (1969), Financial Structure and Development, New Haven, CT: Yale University Press.

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Gujarati, Damodar N (2012), Econometrics by Examples, Palgrave Macmillan, New York.

Guney, E. & Demirel, E. (2019), Access to Finance and Financial Inclusion Impacts on Economic Growth, Social Sciences, Management and Economics Journal, Vol. 1, Iss. 1 January, pp. 32-43.

Hariharan, M. & Marktanner U. (2012), The Need for Financial Inclusion in India, A publication of India Reserve Bank, pp. 22-32.

Honohan, P. (2008), Cross-Country Variation in Household Access to Financial Services, Journal of Banking & Finance, Vol. 32.

Mckinnon, RI (1973), Money and Capital in Economic Development, Brookings Institute, Washington Shaw.

Mankiw, N.G. (2010), Macroeconomics, Seventh Edition, Worth Publishers.

Mishkin, Frederic S., (2016), The Economics of Money, Banking, and Financial Markets, Eleventh Edition, Pearson Education Inc, Boston.

Oanolapo, A.R. (2015), Effects of Financial Inclusion on The Economic Growth of Nigeria (1982-2012), International Journal of Business and Management Review, Vol.3, No.8, September, pp. 11-28.

Ogege, S., & Boloupremo, T. (2014), Deposit Money Banks and Economic Growth in Nigeria, Financial Assets and Investing, Vol. 5, No. 1, pp. 41–50.

Okoye, LU, Adetiloye, KA, Erin, O., & Modebe, NJ (2017), Financial Inclusion as a Strategy for Enhanced Economic Growth and Development, Journal of Internet Banking and Commerce, pp. 1-12.

Rewilak, J. (2017). The Role of Financial Development in Poverty Reduction, Review of Development Finance, 7, pp. 169-176.

Sanjaya, I.M. & Nursechafia (2016), Financial Inclusion and Inclusive Growth: Analysis between Provinces in Indonesia, Bulletin of Monetary Economics and Banking, Vol. 18, No. 3, January, pp. 281-306.

Santoso, B. & Meera, A.K.M. (2017), Strategy of Financial Inclusion Development in Indonesia, SHARE Journal of Islamic Economics and Finance, Vol.6, No.1, pp. 53-84.

Sarma, M. (2008), Index of Financial Inclusion, Finance Working Papers 22259, East Asian Bureau of Economic Research.

Sarma, S. & Pias O. (2011), Financial Inclusion and Development: A Cross Country Analysis, Journal of Economic Literature, Vol. 3, pp. 8-19.

Schumpeter, JA. (1911), The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle, Harvard University Press, Cambridge.

Sharma, D. (2016), Nexus between Financial Inclusion and Economic Growth: Evidence from the Emerging Indian Economy, Journal of Financial Economic Policy, Vol. 8, No. 1, pp. 13-36.

Suidarma, I.M. (2019), The Nexus Between Financial Inclusion and Economic Growth in ASEAN, JEJAK Journal of Economics and Policy, Vol. 12 (2), pp. 267-281.

Sukirno, S. (2004), Introduction Macroeconomics Theory, third edition, Raja Grafindo Persada, Jakarta.

World Bank (2014), Global Financial Development Report 2014: Financial Inclusion, Washington, DC.

Yorulmaz, Recep (2012), Financial Inclusion & Economic Development: A Case Study of Turkey and A Cross-Country Analysis of European Union, Thesis, Clemson University.