Journal of Economics, Business, and Accountancy Ventura Vol. 20, No. 1, April – July 2017, pages 13 – 19

Human development, banking development and the quality of local government: The case of Indonesia

Dewanti Cahyaningsih[1], Irwan Trinugroho[2]

[1, 2] *University of Sebelas Maret, Ir. Sutami Street No. 36A, Jebres, Surakarta, 57126, Middle Java, Indonesia*

A R T I C L E I N F O

Article history:
Received 23 February 2017
Revised 17 March 2017
Accepted 24 April 2017

JEL Classification:
G28

Key words:
Human Development,
Banking Development,
Financial Literacy,
Quality of Local Government, and
Indonesia.

DOI:
10.14414/jebav.v20i1.843

A B S T R A C T

It is essential for the banks to see the quality of the local government when dealing with the human resources and banking development. This study extended the previous one by Trinugroho et al. (2015) in which they focused on the effect of human development on banking development. In that study, they used a moderating effect of the quality of local government on the relationship between human development and banking development. This present study uses a unique data set by disentangling the type of banks (commercial bank, rural bank, and the total of both) to measure financial development. This research uses panel data at the provincial level for the period of 2010-2014. Generally, it could be concluded that human development has positive effect on banking development. To some extent, the quality of local government is found to strengthen the impact of human development on banking development.

A B S T R A K

Penting bagi bank untuk mengetahui kualitas pemerintah daerah ketika dikaitkan dengan sumber daya manusia dan pengembangan perbankan. Studi ini mengembangkan studi sebelumnya oleh Trinugroho dkk. (2015) di mana mereka memfokuskan perhatian pada pengaruh perkembangan manusia terhadap perkembangan perbankan. Dalam studi tersebut, mereka menggunakan pengaruh moderating dari kualitas pemerintah daerah dalam hubungan antara pembangunan manusia dan pengembangan perbankan. Penelitian ini menggunakan data unik dengan cara menguraikan jenis bank (bank umum, bank perkreditan rakyat, dan total keduanya) untuk mengukur perkembangan keuangan. Penelitian ini menggunakan data panel di tingkat provinsi untuk periode 2010-2014. Secara umum, dapat disimpulkan bahwa perkembangan manusia berpengaruh positif terhadap perkembangan perbankan. Sampai batas tertentu, kualitas pemerintah daerah ditemukan untuk memperkuat dampak pembangunan manusia terhadap perkembangan perbankan.

1. INTRODUCTION

The relationship between financial development and banks' growth for many years encourage researchers to explore the study, which was done previously (Padhran 2014). Financial development includes both financial intermediaries (banking) and financial market. It is considered as a good predictor of future economic growth (Levine 1997). Arguably, the more developed financial system in a country; it should lead to a faster economic growth. Kendall (2012) in a cross-country study shows that banking sector is an important component of national growth. Moreover, well-developed financial system could also reduce the corruption levels through well-monitoring function of financial institution (Altunbas 2012).

On the other hand, some studies focus to investigate the determinants of financial development disparity across countries and within a country. Herger et al. (2008), in a cross-country research, investigate the determinants of financial development by putting attention on culture, institution, and trade. One of their finding shows that the firms are typically reluctant to put their fund in the countries with poor institutional development measured by the level of property right. Trinugroho et al. (2015), by studying Indonesia, reveal that local governance at the provincial level and the socio-

** Corresponding author, email address: [1] dewanticahyaningsih@gmail.com, [2] irwan.trinugroho@gmail.com.*

economic factors have positive effect on the development of financial sector in the region. They contend that financial institutions have no incentive to operate in poor governance regions and regions that socio-economically underdeveloped. Moreover, Trinugroho and Wiwoho (2016) find that in the regions having good governance, the cost of financial intermediation, which is measured by net interest margin, is lower than in the poor governance regions.

This study extends the study by Trinugroho et al. (2015). This study focuses on a particular factor explaining the difference in banking development in Indonesia, which is the level of human development, more specifically the level of financial literacy. To access finance, people need a capability at least minimal capability to understand the term and condition about products and services of financial institutions. Financial literacy usually indicates the capability to use financial products and services. However, as we do not have specific data on the level of financial literacy across provinces in Indonesia, we use general measure of human development. Arguably, the higher the level of human development, it eases people to understand such financial products and services, which in turn improve the financial literacy. Moreover, people that are more educated typically are not reluctant to adopt innovation particularly in the financial services. The researchers also put a contingency factor, which is the quality of local government. It could be argued that the effect of human development on financial development should be stronger in the good governed regions.

Indonesia is an appropriate laboratory to study financial development, more particularly in banking development, within a country. It is an archipelago country with higher disparity in financial development (Trinugroho et al. 2015). Moreover, banks play dominant role in the country's economy (Hamada 2010; Trinugroho et al. 2014).Lastly; it has a large number of micro, small and medium enterprises (MSMEs) that need financing through the formal financial institutions, more specifically banking.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Negative Entrenchment Effect

Financial development finds the concept of financial studies. It is defined as the development of financial sector that includes both financial intermediaries (banking) and financial market. Many factors could affect financial development spreading from the economic, social, law and political factors (see Trinugroho et al. 2015 for comprehensive review). However, the focus of this research is not broadly as financial development, rather we look at the banking development which is the development of banking sector both commercial and rural banks (Crouzille et al. 2012). Banking sector supports the economy by the mobilizing of saving which further to finance the business and innovation (Ang 2011).

This present focus here is on a particular factor explaining the difference in banking development across regions in Indonesia, which is the level of human development, more specifically the level of financial literacy. It is widely known that the level of financial literacy is strongly correlated with the degree of human development, which could be explained in some ways. First, more educated people do not have difficulties to understand the information related to banking products and services. Second, people with good education should are mostly eager to make use of innovative products and services. Further, it could be argued that financial inclusion could be accelerated when the level of financial literacy is improved (Astuti and Trinugroho 2016). Subsequently, human development should positively correlate with banking development.

Moreover, this study considers that the impact of human development on banking development could be different between regions having poor and better governance. Poor governance regions are typically associated with unfavorable environment for doing business (Trinugroho et al. 2015). Although the level of human development could improve the level of financial development, this effect would be lowered in poor governed regions. In the well-governed regions where business climate is favorable and regulation is well enforced, it would improve the confidence of well literate people to engage in the formal financial institutions in both the saving and lending activities.

3. RESEARCH METHOD

Data and Variables

This present study focuses on examining the effect of human development on banking development. Following Trinugroho et al. (2015), this study adopts a proxy, which is the ratio of credit released by banks based on location to Province's GDP. However, we also add a measure, which is the ratio of deposit based on banks' location to Province's GDP.

It breaks down the level of banking development according the type of banks, which are com-

Table 1
Variables

Variables	Definition
COB_GDP	Credit of commercial bank to GDP for each province
COR_GDP	Credit of rural bank to GDP for each province
COT_GDP	Credit of total bank to GDP for each province
DEPT_GDP	Deposit of commercial bank to GDP for each province
DEPB_GDP	Deposit of rural bank to GDP for each province
DEPR_GDP	Deposit of total bank to GDP for each province
HDI	Human Development Index for each province
ISLANDS	Dummy variable, 1 for provinces outside Java Islands and 0 for provinces located in Java Islands
NEWPROV	Dummy variable, 1 for new provinces and 0 for old provinces
OIL	Dummy variable, 1 for oil and gas producer's provinces and 0 for the opposite
LNGDPCAP	Natural logarithm of GDP per capita of each province
GOVINDEX	Indonesia Democracy Index of each province

Table 2
Descriptive Statistics of Variables

Variable	Observation	Mean	Median	Max	Min	Std. Dev.
COT_GDP	167	0.243019	0.219700	1.271792	0.000000	0.168802
COB_GDP	167	0.235413	0.210832	1.271018	0.000000	0.167702
COR_GDP	167	0.007605	0.003301	0.053958	0.000000	0.010572
DEPT_GDP	167	0.274249	0.233547	1.488705	0.000000	0.211239
DEPB_GDP	167	0.267937	0.228532	1.487917	0.000000	0.209726
DEPR_GDP	167	0.006312	0.002632	0.044256	0.000000	0.008657
HDI	167	66.81641	66.75000	78.39000	54.45000	4.325013
GOVINDEX	165	67.15048	67.12000	84.70000	52.61000	6.446906
LNGDPCAP	167	10.06994	10.18239	12.07154	2.411616	1.462749

mercial banks, and rural banks. We use panel data of 34 provinces for the period of 2010-2014 resulted in 170 observations in an unbalanced panel.

Data on banking development both for commercial and rural banks including number of bank branches, credit, and deposit are obtained from the Indonesian Banking Statistics published by Bank Indonesia and the Indonesia Financial Service Authority (OJK). Data on Human Development Index for each province, Indonesia Democracy Index (IDI) for each province, GDP for each province, GDP per capita for each province, and population per province are obtained from the Indonesia Statistic Bureau. The data on oil and gas producer province are gathered from Ministry of Energy and Natural Resources.

Our explanatory variable is human development proxied by Human Development Index (HDI). The quality of local government is measured by the democracy index. Arguably, the higher the level of democracy, the better the government runs the region. This study also takes into account some control variables as in Trinugroho et al. (2015), including few socioeconomics and geographical condition. First, we include a dummy variable to articulate provinces insides Java Island and the provinces outside Java Island. It puts the value of 1 for provinces located outside Java Island and 0 for provinces located inside Java Island. This variable is used to control geographical condition. Indonesia has unique characteristic, where socio-economic condition inside Java Island is more prosperous than the socio-economic condition outside Java Island. Second, it includes a dummy variable where 1 for new provinces and 0 otherwise. Seven new provinces have been established after the institutional reform in 1998. Third, the last dummy variable articulates 1 for provinces which are oil and gas producer and 0 otherwise. The last control variable is the natural logarithm of GDP per capita referring to Gallindo & Micco (2004).

The definitions of all variables in this study are shown in Table 1.

Table 3
Correlation Matrix

	Variables	1	2	3	4	5	6	7	8	9	10	11	12
1	COT_GDP	1											
2	COB_GDP	0.998	1										
3	COR_GDP	0.092	0.029	1									
4	DEPT_GDP	0.930	0.924	0.151	1								
5	DEPB_GDP	0.931	0.928	0.112	0.999	1							
6	DEPR_GDP	0.078	0.019	0.947	0.153	0.112	1						
7	HDI	0.488	0.472	0.292	0.523	0.511	0.356	1					
8	GOVINDEX	0.379	0.365	0.248	0.417	0.409	0.265	0.420	1				
9	ISLANDS	-0.300	-0.300	-0.120	-0.390	-0.380	-0.170	-0.410	-0.090	1			
10	NEWPROV	-0.130	-0.120	-0.160	-0.100	-0.100	-0.100	-0.040	-0.040	0.022	1		
11	OIL	-0.230	-0.210	-0.200	-0.180	-0.180	-0.130	0.106	-0.250	-0.150	-0.060	1	
12	LNGDPCAP	0.246	0.258	-0.170	0.343	0.349	-0.110	0.502	0.219	-0.120	0.087	0.269	1

Table 4
Regression Panel Least Square Regression of Total Bank

	Credit to Province's GDP		Deposit to Province's GDP	
	1	2	3	4
Constant	-0.918079***	5.544***	-1.147818***	9.944397***
	-4.156	3.358	-4.273864	5.255206
HDI	0.017211***	-0.082***	0.021576***	-0.149014***
	6.289513	-3.355662	6.486125	-5.298875
ISLANDS	-0.064587**	-0.032	-0.126021***	-0.076241**
	-2.102471	-1.088923	-3.374641	-2.236853
NEWPROV	-0.047131*	-0.030	-0.046378	-0.028838
	-1.833129	-1.233017	-1.483843	-1.02135
OIL	-0.093483***	-0.069***	-0.102107***	-0.057554**
	-4.239746	-3.179162	-3.809399	-2.313656
GOVINDEX		-0.094***		-0.159506***
		-3.904683		-5.808811
GOVINDEX*HDI		0.001***		0.002452***
		4.038495		6.014283
LnGDPCap	0.011157	0.009	0.013427	0.007
	1.446477	1.151639	1.432001	0.768182
Observation	167	165	167	165
R-Squared	0.366754	0.452805	0.402433	0.543275

*, **, and ***indicates the significance level of10%, 5%, and 1%.

Regression

To test the impact of human development on banking development, this study uses static panel data method. This study could not be able to control for individual fixed effect due to there is a number of variables, which are time-invariant. These are the basic models used in this study:

$$BankingDevi = a0 + a1HDIi + a2Islandsi + a3NewProvincei + a4Oili + a5Lngdpcapii + \varepsilon i,t. \quad (1)$$

$$BankingDevi = a0 + a1HDIi + a2Islandsi + a3NewProvincei + a4Oili + aGovIndex5i + a6HDI*GovIndexi + \varepsilon i,t. \quad (2)$$

Table 5
Regression Panel Least Square Regression of Commercial Banks

	Credit to Province's GDP		Deposit to Province's GDP	
	1	**2**	**3**	**4**
Constant	-0.917***	5.485687***	-1.145284***	9.865139***
	-4.105	3.27327	-4.250941	5.174047
HDI	0.017***	-0.081899***	0.020974***	-0.148235***
	5.999469	-3.288333	6.285197	-5.231452
ISLANDS	-0.061895**	-0.029699	-0.123179***	-0.073483**
	-1.99376	-0.983874	-3.288086	-2.139709
NEWPROV	-0.040239	-0.02347	-0.041506	-0.023909
	-1.548675	-0.938564	-1.323782	-0.840391
OIL	-0.087***	-0.06342***	-0.097884***	-0.054078**
	-3.914124	-2.878664	-3.640309	-2.157561
GOVINDEX		-0.092813***		-0.158448***
		-3.816449		-5.726801
GOVINDEX*HDI		0.001423***		0.002433***
		3.940787		5.924204
LnGDPCap	0.013731*	0.011276	0.016027*	0.009305
	1.761546	1.491219	1.703865	1.081683
Observation	167	165	167	165
R-Squared	0.344771	0.429584	0.389929	0.529914

*, **, and ***indicates the significance level of10%, 5%, and 1%.

4. DATA ANALYSIS AND DISCUSSION

Regression Results

Table 2 exhibits the descriptive statistics of variables excluding dummy variables, while correlation among variables is presented in Table 3. The correlation shows that human development index is positively correlated with the ratio of credit to GDP and the ratio of deposits to GDP, which meet our expectation.

Table 4 presents the regression results when we did not disentangle the banking development measure between commercial and rural banks. As presented in column 1 and 3 (basic regression model), human development has positive effect on banking development both the ratio of credit to province's GDP and the ratio of deposits to province's GDP. It means that in the provinces with higher human development, the level of banking development is higher as well which is in line with the finding of Trinugroho et al. (2015). It could be argued that financial literacy which is reflected in the level of human development play important role in explaining the different level of banking inclusion across regions in Indonesia. Without sufficient level of financial literacy, it could be difficult for people to engage in the formal financial institutions (Astuti and Trinugroho 2016).

Moreover, the researchers separate the banking development into commercial banks and rural banks. As exhibited in column 1 and 3 of Table 5, human development is positively associated with the level of credit to province's GDP as well as with the ratio of deposits to province's GDP. Similar results are found when we turn to the rural banks which is presented in Table 6. Human development is found to have positive effect on credit and deposits of rural banks deflated by the province's GDP.

Turn to the role of the quality of local government, as presented in column 2 and 4 of Table 4 and 5, we find positive coefficient of the interaction between human development and the quality of local government. It means that the stronger effect of human development on banking development, more particular for commercial banks, is found in the provinces with better quality of local government. However, we did not find similar evidence for rural banks.

Table 6
Regression Panel Least Square Regression of Rural Banks

	Credit to Province's GDP		Deposit to Province's GDP	
	1	**2**	**3**	**4**
Constant	-0.001521	0.05856	-0.002534	0.079259
	-0.104575	0.498226	-0.222127	0.864434
HDI	0.00062***	-0.000442	0.000602***	-0.000779
	3.441365	-0.25333	4.260216	-0.571958
ISLANDS	-0.002692	-0.002686	-0.002843*	-0.002757*
	-1.330805	-1.268535	-1.791861	-1.66968
NEWPROV	-0.006892***	-0.006908***	-0.004871***	-0.004929***
	-4.071657	-3.938835	-3.668773	-3.603022
OIL	-0.006267***	-0.005586***	-0.004223***	-0.003476***
	-4.316827	-3.615181	-3.708295	-2.883558
GOVINDEX		-0.000743		-0.001058
		-0.435783		-0.795406
GOVINDEX*HDI				
LnGDPCap	-0.002574***	-0.002696***	-0.0026***	-0.002747***
	-5.068575	-5.08448	-6.526573	-6.639585
Observation	167	165	167	165
R-Squared	0.30015	0.306542	0.35791	0.37066

*, **, and ***indicates the significance level of10%, 5%, and 1%.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

The researchers extend the study of Trinugroho et al. (2015) by emphasizing on the effect of human development on banking development. This study also tests whether the effect of human development on banking development would be different depending on the quality of local government. This research uses 34 provincial data collected from Bank Indonesia and the Indonesia Service Authority (OJK) during the period of 2010-2014. This study provides some findings.

In general, it could be concluded that human development has positive effect on banking development. To some extent, the quality of local government is found to strengthen the impact of human development on banking development. Improving the level of financial literacy is strongly needed to make unbanked and under banked people be included in the financial access.

REFERENCES

Altunbaş, Y, Thornton, J 2012, 'Does financial development reduce corruption?', *Economics Letters*, 114:221–223.

Ang, JB 2011, 'Savings Mobilization, Financial Development and Liberalization: The Case of Malaysia', *Review of Income and Wealth*, Series 57, Number 3, September 2011.

Astuti, PH, Trinugroho, I 2016, 'Financial Literacy and Engagement in Banking', *Journal of Economics and Economic Education Research,* 17(1), 1-6.

Crouzille, CM, Nys, E, Sauviat, A 2012, 'Contribution of Rural Banks to Regional Economic Development: Evidence from the Philippines', *Regional Studies*, 46:6, 775-791.

Galindo, A, Micco A 2004, 'Creditor Protection and Financial Markets: Empirical Evidence and Implications for Latin America', *Federal Reserve Bank of Atlanta Economic Review,* Q2, 29–37.

Hamada, Miki, 2010, 'Commercialization of Microfinance In Indonesia: The Shortage of Funds and The Linkage Program', *The Developing Economies,* 48, no. 1 (March): 156–76.

Herger, N, R Hodler and M Lobsiger, 2008, 'What Determines Financial Development? Culture, Institutions or Trade', *Review of World Economics*, 144, 558-587.

Kendall, J 2012, 'Local Financial Development and Growth', *Journal of Banking & Finance*, 36: 1548–1562.

Levine, R 1997, 'Financial Development and Economic Growth: Views and Agenda', *Journal of Economic Literature*, 35: 688-726.

Padhran, RP, Arvin, MB, Hall, JH, Bahmani, S 2014, 'Causal Nexus between Economic Growth, Banking Sector Development, Stock Market Development, and Other Macroeconomic Variables: The Case of ASEAN Country', *Review of Financial Economics*, 23: 155-173.

Trinugroho, I, A Agusman and A Tarazi, 2014, 'Determinants of Bank Interest Margin: What Matters For Indonesian Banks?', *Research in International Business and Finance*, 32, 139-158.

Trinugroho I, Agusman A, Ariefianto MD, Darsono D, Tarazi A 2015, 'Determinants of cross regional disparity in financial deepening: Evidence from Indonesian provinces', *Economics Bulletin*, Vol. 35, Issue 2, pp. 896-910.

Trinugroho, I, Wiwoho, J 2016, 'Local Institutional Development and Cost of Financial Intermediation: Evidence from Indonesia', *International Journal of Business*, 21 (4), 319-327.