Local banking structure and firms' performance: Evidence from Indonesia

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Abstract

This study investigates the relationship between financial development and firm's performance. Our unique dataset allows us to identify different source of finance, whether it is from formal (commercial, rural, and sharia bank) or other sources. Using provincial and firms level data of 33 provinces in Indonesia over the period 2007-2013, we find that lending has a positive relationship on firm's performance. The effect is different depending on the level of economic development and size of the firm. The lending from commercial and rural bank is positively correlated with the firm's performance in developed region. However, in less developed region, rural bank has a negative relationship on the firm's performance. Lending from commercial, rural, and sharia bank positively linked with the performance of small, medium, and large firm's performance. Improving and promoting lending to firms will accelerate firm's performance. Firms might also take consideration to find the source of finance other than banks.

Abstrak

Penelitian ini menginvestigasi hubungan antara perkembangan keuangan dan kinerja perusahaan. Penelitian ini munggunakan data detail yang memungkinkan untuk mengidentifikasi darimana sumber dana suatu perusahaan apakah itu dari sector formal atau sumber lain. Penelitian ini menggunakan data tingkat provinsi dan perusahaan dari 33 provinsi di Indonesia tahun 2007-2013. Hasil penelitian ini menemukan bahwa kredit memiliki hubungan positif terhadap kinerja perusahaan. Hubungan tersebut berubah tergantung dengan tingkat ekonomi pembangunan suatu provinsi dan ukuran perusahaan. Kredit dari bank komersial dan BPR berkorelasi positif dengan kinerja perusahaan di provinsi maju. Walaupun, di provinsi yang berkembang, kredit dari BPR memiliki hubungan negatif dengan kinerja perusahaan. Kredit dari bank komersial, bank syariah, dan BPR memiliki hubungan positif terhadap kinerja UMKM dan perusahaan. Kesimpulan dari penelitian ini adalah kredit ke perusahaan akan mempercepat kinerja perusahaan dan perusahaan juga perlu mempertimbangkan sumber pendanaan di luar bank.

1. Introduction

There are many empirical evidence provides that financial development affect economic growth (King & Levine, 1993; Rajan & Zingales, 1996; Levine et al., 1999). The crucial link is about how financial development affects firm performance in case of helping firm through external finance. This is because financial services are restricted to enterprises and also household, especially in developing country (Beck & De La Torre, 2007). In addition, in better developed financial system, enterprises which able to rely on external finance tend to grow faster (Demirgüç-Kunt & Maksimovic, 1998).

This work tries to extend the literature on financial development and firm performance by looking at the local banking structure. The literature about the role of local banking structure in improving SME performance is still rare. Hasan et al. (2017) investigate the relationship between local banking structures and SMEs' access to finance and performance. Using banks in Poland, they find that cooperative banks facilitate access to bank lending, lowers financial cost, boosts investments, and favors growth for SME. Inspired by their approach, we contribute to the literature by investigating the role of local banking structure in a dual banking market. Abedifar et al. (2016) find that the presence of medium-size Islamic bank is associated with higher level of funds mobilization, economic growth and reduce poverty.

Bank market structure has an important role in shaping SME as well as economy as a whole (Hasan et al., 2017). Indonesia has several types of local banking structures; commercial bank, Islamic bank, and rural bank. Rural banks are more interested in serving SMEs through relationship lending. This technique is able to reduce the opaqueness of SMEs (de la Torre et al., 2010). In addition, Meslier-Crouzille et al. (2012) also find that regional and locally-owned bank behave differently with national or non-locally-owned bank. Locally-owned bank have a competitive advantage because they have superior access to local information, able to do relationship lending and greater commitment to better monitor and assess the risk of local firms. Hakenes et al. (2015) show that small bank which operates in a region could be able to push the economic growth more than big banks. It happens especially in a region which has lower endowment and severe credit rationing. Small bank has more advantages in decreasing local financial constraint (Berger et al., 2015).

The bank influence access to finance in the form of lending for SMEs, and should impact their performance. Abor et al. (2014) find that bank lending could improve the likelihood SMEs to export and improve their growth. Fowowe (2017) finds that the financial constraint could have a significant negative impact on firm growth. Firms without credit constrained grow faster than firms which are credit constrained.

In addition, the growth of Islamic bank is also become major interest, especially in Muslim countries. Abedifar et al. (2016) find that the presence of medium-size Islamic bank is associated with higher level of funds mobilization, economic growth and reduce poverty. The operation of Islamic bank may also matter for the commercial bank when operate alongside and act to compete each other. They find that greater market share of Islamic bank, higher efficiency of the conventional bank would be. Gheeraert (2014) find that the development of Islamic bank in Muslim countries leads to higher banking sector development. This bank is beneficial when it exists along with the conventional system and reaches a medium penetration level in the country's financial system. In case of the relationship between Islamic bank and enterprises, Shaban et al. (2014) provide evidence that Islamic bank is taking more benefit in lending to small business. It shows by the increases of net interest margin with a lower capital compared to conventional bank. The product of Islamic banks is more suitable for small business since they are easing the collateral requirement. However,

as consequences, Islamic bank signal overpricing behavior due to the risk exposure of their product

This work relates to several strands of the literature. We study Indonesian banks and firm to investigate the role of local banking market on firm performance. Indonesia is a dual banking market and prominent emerging market. Indonesia as the emerging market country is ideal to be studied since the number of SMEs are more than 57 million with 114 million employees in 2013 (Indonesia Statistic Bureau, 2013). Indonesia is also a country with highest Muslim population in the world. The number of Muslim people reaches over 207 million people (89 percent) in 2010. It may affect the development of Islamic bank in this country. As the biggest archipelago in the world, we are also able to take into account the difference effect between developed and less developed region as well as the size of the firm. Our result shows that lending has a positive relationship with firms' performance. However, the effect is different depending on the level of economic development.

The remainder of this paper organized as follows. The second section presents data, measurement, and methodology. Section three hypothesis testing and model specification. Section four discuss the main result and discussion. Section five discuss conclusion of this study.

2. Hypotheses Development

This study investigates the link between financial developments to firm performance. We combine two unique datasets at province-level and firm-level. The data set used for this paper allows us to analyze the effect of bank lending to firm performance. We also able to test the effect of each type of bank to better understanding on which type bank affects firm performance.

We study 33 provinces in Indonesia over the period 2007-2013 reported by Indonesia Statistic Bureau or *Badan Pusat Statistik* (BPS). There are 34 provinces in Indonesia. One province, Kalimantan

Utara, are excluded since this province was established in 2012. Based on the analysis, there are 18 provinces are categorized as developed provinces, which are: DKI Jakarta, Kalimantan Timur, Kepulauan Riau, Riau, Papua Barat, Papua, Jambi, Bangka Belitung, Jawa Timur, Sumatra Selatan, Sumatra Utara, Kalimantan Tengah, Banten, Bali, Sulawesi Utara, Kalimantan Selatan, Sulawesi Tenggara, and Sulawesi Selatan. So, other provinces categorized as less developed province.

We also employ the lending data from Indonesia Financial Service Authority or *Otoritas Jasa Keuangan* (OJK) to determine which source of finance affect firm's performance. There are four types of enterprises in Indonesia based on the number of total assets. According to the Law of Republic Indonesia number 20 year 2008, micro-firm is firm with net asset no more than 50 million IDR (equal about 3,582 USD - Central Bank of Republic Indonesia exchange rate May, 2018. 1 USD = Rp13,956) and maximum, small firm is firm with net asset no more than 500 million IDR (equal about 35,820 USD), medium firm is firm with net asset no more than 1 billion IDR (equal about 71,650 USD), and large firm is firm with minimum net asset 1 billion IDR.

Table 1 presents the descriptive statistics for each province's economic and financial development. This table shows based on the data average over the period 2007-2013. Papua Barat (West Papua) has the most accelerate GDP growth rate in the country since the government allocates special autonomy funds to Papua region. However, this province is also the province with the very high level of poverty. Regarding the regional economic development, banking industry in Indonesia is still dominated by commercial bank. The market share of commercial bank is 93 percent. While the market share of rural bank is only 3 percent and 4 percent for sharia bank. The highest lending is exhibit by DKI Jakarta, Jawa Tengah, Jawa Timur, and Banten. These provinces are located in Java Island and known as the most populated island and the central for economy and business activities in Indonesia.

Table 1. Descriptive statistics of Economic and Financial Development for each province

Province	GDP Growth	GDP per capita	Poverty	Total lending	Lending Commercial Bank	Lending Rural Bank	Lending Sharia Bank
Aceh	-0.04	9.50	21.26	124878.43	15373.43	81.85	1617.86
Bali	0.03	9.68	5.06	323602.51	26970.71	3157.03	619.14
Bangka Belitung	0.02	11.20	6.92	54375.94	16109.14	21.26	223.43
Banten	0.02	9.35	7.13	862202.99	44953.86	781.64	2702.43
Bengkulu	0.04	9.31	18.92	88696.70	6531.86	21.98	374.43
D.I. Yogyakarta	0.01	9.73	16.91	165927.52	13610.43	1825.57	1077.86
DKI Jakarta	0.00	9.19	3.88	5508210.53	964600.14	630.97	36054.43
Gorontalo	0.12	9.54	21.45	44159.73	5400.14	20.34	174.57
Jambi	0.12	9.49	8.86	174603.30	13141.86	289.14	921.29
Jawa Barat	0.00	9.70	11.42	2309465.90	155253.00	6149.22	9747.86
Jawa Tengah	0.02	9.56	17.02	1364651.11	108308.57	8829.21	4983.00
Jawa Timur	0.01	10.25	15.78	1964212.99	174921.14	4394.66	7230.29
Kalimantan Barat	0.01	9.59	9.66	233216.96	16746.29	395.23	1047.71
Kalimantan Selatan	0.00	9.77	5.55	235156.92	18710.29	209.85	1359.43
Kalimantan Tengah	0.02	10.67	7.27	153743.83	9237.00	48.25	293.57
Kalimantan Timur	0.02	9.30	7.92	438592.08	36001.57	170.16	1744.14
Kepulauan Riau	0.00	9.62	8.05	166081.07	23874.00	1472.86	1029.29
Lampung	0.05	9.43	18.47	315112.03	21550.14	3474.04	1127.86
Maluku	0.08	10.87	24.68	49411.17	3944.43	320.00	43.43
Maluku Utara	0.10	9.67	11.36	29587.21	2498.00	6.66	92.71
Nusa Tenggara Barat	0.01	9.42	21.16	128577.49	10476.29	485.25	740.14
Nusa Tenggara Timur	0.03	9.45	23.05	100983.26	8824.57	123.92	115.86
Papua	0.09	9.57	34.57	106159.52	9488.57	258.00	288.43
Papua Barat	0.13	8.89	30.23	40886.35	3495.14	42.54	96.43
Riau	0.04	9.05	9.27	418803.83	31123.71	493.24	1861.29
Sulawesi Barat	0.08	9.39	15.65	30935.28	3079.57	2.99	126.20
Sulawesi Selatan	0.05	9.03	12.26	527425.74	45461.00	464.93	2321.29
Sulawesi Tengah	0.04	9.60	17.07	125455.43	9708.00	439.92	463.71
Sulawesi Tenggara	0.10	8.61	16.40	81136.11	4702.86	58.32	307.14
Sulawesi Utara	0.03	8.77	9.43	169785.68	14079.00	368.61	273.86
Sumatra Barat	0.00	9.86	9.46	265857.63	21417.00	825.67	1880.57
Sumatra Selatan	0.01	8.89	15.77	395168.01	10936.00	481.70	1944.00
Sumatra Utara	0.00	10.03	11.63	861716.91	95810.86	505.17	4250.57

GDP growth, GDP per capita, and poverty show as percentage Total lending, lending of commercial, rural and sharia bank show as millions Indonesian Rupiah

Our dependent variable is firm's performance. Following Soedarmono et al. (2019), the proxies for firm's performance are as follows: First, we use the ratio of total output to total input to production (logout). This proxy is used to determine firm productivity. Second, we use ratio of firm value added to total output (logval). Higher logval means higher firms' ability to innovate, higher competitiveness that leads to higher performance. Last proxy for firm performance is logprod which is the ratio of total income to total cost of raw material used for production. Higher logprod means that firm have higher productivity. It means that firms are able to be more efficient since they can produce same amount of output with lower raw material. We follow this existing literature since we have same data set for firm level.

The independent variable of this study is regional financial development. We use the total lending in the province. We also distinguish the total lending based on formal or other sources. To be more focus, we also distinguish the lending based on the type of bank into three categories: lending of commercial bank (including state-owned, commercial and foreign bank), rural bank, and Islamic bank.

In order to control macro-level estimation, we are taking into account the role of the population (*logpopulation*). Following Hasan et al. (2017), the higher population is associated with greater agglomeration, which is expected to spur firm investment due to increased demand. We also taking into account the level of Human Development Index. Referring to UNDP, the Human Development Index (HDI) is defined as a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. Therefore, it might have impact on poverty. We expect that the provinces with better access to education and health

will have less poverty rate. Moreover, a set of control variable for firm level performance are also included: firm's age, firm's total asset, firm's umber of employee (labor).

3. Method, Data, and Analysis

To test our hypothesis the specification to test the relationship between firm's performance and economic development shows below:

$$Firms\ Performance_{i,p,t} = \alpha + \beta_2 Lending_{p,t} +$$
$$\gamma_1 Log\ Population_{p,t} + \gamma_2 HDI_{p,t} + \gamma_3 Inflation_{p,t} +$$
$$\gamma_4 GDP\ growth_{p,t} + \gamma_5 Poverty_{p,t} + \gamma_6 Log\ Total\ Asset_{i,p,t} +$$
$$\gamma_7 Labor_{i,p,t} + \gamma_7 Age_{i,p,t} + \varepsilon_{i,p,t} \quad \text{..(1)}$$

Our interest will be on the coefficient and significant sign. We also take into account the difference between developed and less developed region, either difference in firms' size. For the coefficient of firms' performance, better financial development is associated with the easiness of enterprises to get external financing, so they can be more productive and efficient. We expect that the coefficient will be positive and significant. Regarding the development of the region, we expect that the presence of rural bank has a positive impact on the economic development. This bank will be more beneficial for people in less development region (Meslier-Crouzille et al., 2012). Rural banks fill the gap of the reluctance of commercial bank lending to SMEs in the market. This bank also plays a significant role to reduce poverty in unbanked area (Burgess & Pande, 2005). Thus, we expect that rural bank will be more beneficial for micro and small firm since rural bank more able to do relationship lending and use soft information to access creditworthiness of firm. We expect the coefficient will be higher than the effect for medium and large firm.

Table 2. Descriptive statistic for firm-level data

Stats.	Definition	N	Mean	SD	Min.	Max.
	Dependent Variable (Firm-level)					
Logout	Log of ratio of total output to input cost	101409	0.89	1.37	-5.87	14.87
Logval	Log of ratio of total value added to total output	101455	-13.34	3.62	-28.7	-5.83
Logprod	Log of ratio of total production value to total cost of raw material	97361	-12.2	3.4	-28.67	2.88
	Independent Variable (Firms-level)					
Lending_gdp	Total lending to province/province's GDP	101456	9.07	5.22	0.42	26.42
Lendingformal	Total lending of commercial, rural and sharia bank to province/province's GDP	101443	0.94	0.99	0.13	5.08
Lendingother	Total lending to province – lending of commercial, rural, and sharia bank to province/province's GDP	101443	8.12	4.38	0.23	21.47
Comm_gdp	Lending of commercial bank to province/province's GDP	101456	0.88	0.95	0.1	4.96
Rural_gdp	Lending of rural bank to province/province's GDP	101456	0.03	0.03	0	0.2
Sharia_gdp	Lending of sharia bank to province/province's GDP	101443	0.04	0.04	0	0.22
	Province's Level Variable					
Logpopulation	Log of number of populations in a province	101456	16.87	0.89	13.46	17.64
HDI	Human Development Index	101456	69.57	3.46	54	79
Inflation	Inflation rate	101456	0.51	0.23	0.18	0.93
Growth	Province's GDP growth	87464	0.02	0.13	-1.82	2
Poverty	Poverty rate	101433	13.05	4.74	3	41
	Firm's Level Variable					
Logtotalasset	Log of firms' total asset	101023	13.97	2.19	0.69	30.36
Labor	Number of firm's employee	101456	171.88	631.26	20	38343
Age	Firm's age	101456	20.14	12.29	1	96

Table 3. Regression lending to firm's performance

Stats.	Definition	N	Mean	SD	Min.	Max.
	Dependent Variable (Firm-level)					
Logout	Log of ratio of total output to input cost	101409	0.89	1.37	-5.87	14.87
Logval	Log of ratio of total value added to total output	101455	-13.34	3.62	-28.7	-5.83
Logprod	Log of ratio of total production value to total cost of raw material	97361	-12.2	3.4	-28.67	2.88
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Lendingother	Total lending to province – lending of commercial, rural, and sharia bank to province/province's GDP	101443	8.12	4.38	0.23	21.47
Comm_gdp	Lending of commercial bank to province/province's GDP	101456	0.88	0.95	0.1	4.96
Rural_gdp	Lending of rural bank to province/province's GDP	101456	0.03	0.03	0	0.2
Sharia_gdp	Lending of sharia bank to province/province's GDP	101443	0.04	0.04	0	0.22
	Province's Level Variable					
Logpopulation	Log of number of populations in a province	101456	16.87	0.89	13.46	17.64
HDI	Human Development Index	101456	69.57	3.46	54	79
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Age	Firm's age	101456	20.14	12.29	1	96

t statistics in parentheses ="* p<0.1 ** p<0.05 *** p<0.01"

4.   Results

Our results on the effect of regional financial development on firm's performance are significant. Table 3 shows, in all-region, formal lending is significantly positive affects firm performance. A nega-

tive and significant effect is obtained between lending from other sources to firm's performance. On the contrary, the positive and significant relationship is shown in less developed region as shown in Table 4. The other estimations are constructed to

Table 4. Regression lending to firm's performance in developed and less-developed region

		(1) logout	(2) logout	(3) logout	(4) logval	(5) logval	(6) logval	(7) logprod	(8) logprod	(9) logprod
Developed Reg	L.lending_gdp	0.0210* (1.93)			-0.0127 (-1.02)			-0.00321 (-0.24)		
	L.lendingformal		0.0496 (0.86)			0.162** (2.37)				
	L.lendingother			0.0220* (1.89)			-0.0203 (-1.52)			
Less Dev. Reg	L.lending_gdp	-0.0324 (-0.90)			0.0960** (2.42)			0.0949** (2.14)		
	L.lendingformal		-0.00153 (-0.01)			0.317 (1.10)			0.496 (1.43)	
	L.lendingother			-0.0383 (-1.03)			0.109*** (2.73)			0.103** (2.31)
	Control variable included	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Year fixed effect	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 5. Regression the effect of lending on firm's performance based on the firms' size

		(1) logout	(2) logout	(3) logval	(4) logval	(5) logprod	(6) logprod
Micro Firm	L.lendingformal	-0.00951 (-0.21)		0.131** (-2.19)		0.134** (-2.32)	
	L.lendingother		0.0054 -0.6		-0.0250** (-2.15)		-0.0234** (-2.09)
Small Firm	L.lendingformal	-0.0762 (-0.73)		0.141 -0.95		0.246 -1.51	
	L.lendingother		0.0315** (-2.2)		-0.00725 (-0.39)		0.0244 (-1.56)
Medium Firm	L.lendingformal	0.037 (-0.71)		0.116* (-1.86)		0.155** (-2.32)	
	L.lendingother		0.0178* -1.76		-0.0229** (-1.98)		-0.00941 (-0.75)
Large Firm	L.lendingformal	1.521 (-0.35)		1.015 (-0.64)		-0.726 (-0.15)	
	L.lendingother		2.901 (-1.51)		1.095*** (-3.12)		3.174 (-1.42)
	Control variable included	YES	YES	YES	YES	YES	YES
	Year fixed effect	YES	YES	YES	YES	YES	YES

analyze which of type of bank affects firm's performance. In general, lending from commercial, rural and sharia bank matter in shaping firm's performance. However, the effect is different when we do subsample based on the level of development of a region.

Furthermore, we go deeper on firm's performance based on the size of firms, we find that commercial and rural bank have positive and significant effect on firm's performance as shown in Table 5. In addition, small, medium and large enterprises' performance are affected by commercial, rural, and sharia bank. Lending based on the type of bank in less developed region have different result. We find

positive significant relationship between lending of sharia bank to micro, small, and medium firms' performance. Surprisingly, the link between lending from rural bank to firms in less development is negative and significant. At first, we expect that lending from rural bank will be more beneficial for SMEs since they are able to do better with relationship lending, as explained in many existing literatures. However, we find the contrary. In the less developed area, we find a positive and significant relationship between lending from sharia bank for micro, small, and medium firms' performance. We also find surprising evidence that the effect of rural bank in less developed region is negative and significant.

Table 6. Regression the effect of bank lending on firm's performance

	(1) logout	(2) logout	(3) logout	(4) logval	(5) logval	(6) logval	(7) logprod	(8) logprod	(9) logprod
L.comm_gdp	0.0344			0.114*			0.152**		
	(0.65)			(1.78)			(2.22)		
L.rural_gdp		-0.461			3.002***			2.247**	
		(-0.51)			(2.84)			(2.02)	
L.sharia_gdp			2.194**			-0.231			2.121
			(2.21)			(-0.20)			(1.64)
L.logpopulation	0.152	0.164	0.164	-0.124	-0.236	-0.136	0.0456	-0.0435	0.0465
	(0.86)	(0.92)	(0.93)	(-0.71)	(-1.33)	(-0.78)	(0.19)	(-0.18)	(0.20)
L.hdi	0.00292	0.00519	0.000484	-0.0225***	-0.0201***	-0.0161**	-0.0198**	-0.0148*	-0.0161**
	(0.45)	(0.80)	(0.08)	(-3.03)	(-2.65)	(-2.19)	(-2.51)	(-1.82)	(-2.06)
L.inflation	-0.301	-0.306	-0.389*	-1.155***	-1.023**	-1.110***	-1.456***	-1.338***	-1.505***
	(-1.52)	(-1.54)	(-1.94)	(-2.81)	(-2.50)	(-2.71)	(-2.93)	(-2.70)	(-3.02)
L.growth	-0.257*	-0.269*	-0.242*	0.00906	0.0154	-0.0180	-0.193	-0.204	-0.204
	(-1.76)	(-1.87)	(-1.67)	(0.07)	(0.11)	(-0.13)	(-1.07)	(-1.15)	(-1.14)
L.poverty	0.0193**	0.0223**	0.0101	0.00656	0.00974	0.0154	0.0100	0.0171	0.00914
	(2.04)	(2.45)	(1.00)	(0.51)	(0.78)	(1.20)	(0.74)	(1.29)	(0.66)
L.logtotalasset	-0.00223	-0.00215	-0.00215	-0.0305***	-0.0303***	-0.0303***	-0.0301**	-0.0299**	-0.0297**
	(-0.24)	(-0.23)	(-0.23)	(-2.99)	(-2.96)	(-2.96)	(-2.38)	(-2.36)	(-2.35)
L.labor	-0.00001	-0.00001	-0.00001	-0.0005***	-0.0005***	-0.0005***	-0.0004***	-0.0004***	-0.0004***
	(-0.42)	(-0.42)	(-0.43)	(-4.29)	(-4.29)	(-4.29)	(-4.12)	(-4.12)	(-4.13)
L.age	-0.0124	-0.0123	-0.0124	0.0320	0.0308	0.0318	0.0361	0.0351	0.0359
	(-0.44)	(-0.44)	(-0.44)	(0.85)	(0.82)	(0.84)	(1.01)	(0.98)	(1.00)
_cons	-1.619	-2.014	-1.453	-8.737***	-7.163**	-9.099***	-10.59**	-9.617**	-10.77***
	(-0.51)	(-0.64)	(-0.46)	(-2.76)	(-2.24)	(-2.88)	(-2.55)	(-2.33)	(-2.60)
N	66125	66125	66118	66162	66162	66155	63390	63390	63383
N_g	18718	18718	18717	18722	18722	18721	18162	18162	18161
r2	0.00220	0.00219	0.00235	0.0434	0.0435	0.0433	0.0270	0.0269	0.0269
Year fixed effect	YES	YES	YES	YES	YES	YES	YES	YES	YES

t statistics in parentheses="* p<0.1   ** p<0.05 *** p<0.01"

Table 7. Regression the effect of bank lending on firm's performance in developed and less developed region

		(1) logout	(2) logout	(3) logout	(4) logval	(5) logval	(6) logval	(7) logprod	(8) logprod	(9) logprod
Developed Reg.	L.comm_gdp	0.0487 (0.82)			0.166** (2.35)			0.183** (2.43)		
	L.rural_gdp		-0.741 (-0.62)			2.365* (1.73)			2.725** (1.98)	
	L.sharia_gdp			2.196* (1.96)			0.331 (0.26)			2.396* (1.66)
Less Dev. Reg	L.comm_gdp	-0.0767 (-0.34)			0.404 (1.30)			0.576 (1.53)		
	L.rural_gdp		0.709 (0.36)			-5.568* (-1.92)			-7.017** (-2.23)	
	L.sharia_gdp			3.368* (1.66)			1.867 (0.74)			5.169* (1.74)
	Control var included	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Year fixed effect	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 8. Regression the effect bank lending on firm's performance based on the firms' size

		(1) logout	(2) logout	(3) logout	(4) logval	(5) logval	(6) Logval	(7) logprod	(8) logprod	(9) logprod
Micro Firm	L.comm_gdp	-0.00988 (-0.31)			0.0909** (2.01)			0.0626 (1.35)		
	L.rural_gdp		0.353 (0.54)			3.937*** (4.54)			3.884*** (4.42)	
	L.sharia_gdp			1.062 (1.54)			-0.503 (-0.53)			0.0124 (0.01)
Small Firm	L.comm_gdp	-0.0727 (-0.67)			0.121 (0.79)			0.237 (1.42)		
	L.rural_gdp		-0.927 (-0.94)			4.223*** (3.05)			2.707* (1.85)	
	L.sharia_gdp			0.0123 (0.01)			-0.254 (-0.12)			0.251 (0.10)
Medium Firm	L.comm_gdp	0.0184 (0.51)			0.118** (2.48)			0.0935* (1.84)		
	L.rural_gdp		0.0246 (0.03)			3.535*** (3.97)			3.392*** (3.56)	
	L.sharia_gdp			1.915** (2.41)			-0.0353 (-0.03)			0.926 (0.84)
Large Firm	L.comm_gdp	2.662 (0.69)			1.556** (2.20)			1.170 (0.30)		
	L.rural_gdp		230.1 (0.71)			137.1** (2.08)			480.0 (1.34)	
	L.sharia_gdp			38.74 (0.83)			29.33*** (3.41)			33.01 (0.68)
	Control var included	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Year fixed effect	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 9. Regression the effect of bank lending on firm's performance in developed region

		(1) logout	(2) logout	(3) logout	(4) logval	(5) logval	(6) logval	(7) logprod	(8) Logprod	(9) logprod
Micro Firm	L.comm_gdp	-0.00988 (-0.31)			0.0909** (2.01)			0.0626 (1.35)		
	L.rural_gdp		0.353 (0.54)			3.937*** (4.54)			3.884*** (4.42)	
	L.sharia_gdp			1.062 (1.54)			-0.503 (-0.53)			0.0124 (0.01)
Small Firm	L.comm_gdp	-0.0842 (-0.65)			0.0990 (0.55)			0.116 (0.60)		
	L.rural_gdp		-1.096 (-0.79)			3.614** (1.97)			3.357* (1.87)	
	L.sharia_gdp			-0.979 (-0.57)			-0.388 (-0.14)			-0.359 (-0.10)
Medium Firm	L.comm_gdp	0.0184 (0.51)			0.118** (2.48)			0.0935* (1.84)		
	L.rural_gdp		0.0246 (0.03)			3.535*** (3.97)			3.392*** (3.56)	
	L.sharia_gdp			1.915** (2.41)			-0.0353 (-0.03)			0.926 (0.84)
Large Firm	L.comm_gdp	2.662 (0.69)			1.556** (2.20)			1.170 (0.30)		
	L.rural_gdp		230.1 (0.71)			137.1** (2.08)			480.0 (1.34)	
	L.sharia_gdp			38.74 (0.83)			29.33*** (3.41)			33.01 (0.68)
	Control var included	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Year fixed effect	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 10. Regression the effect of bank lending on firm's performance in less-developed region

		(1) logout	(2) logout	(3) logout	(4) logval	(5) logval	(6) logval	(7) logprod	(8) logprod	(9) logprod
Micro Firm	L.comm_gdp	0.178 (1.14)			-0.321 (-1.39)			-0.0297 (-0.11)		
	L.rural_gdp		-0.702 (-0.45)			-4.167* (-1.80)			-5.994** (-2.42)	
	L.sharia_gdp			3.747*** (2.64)			-0.789 (-0.35)			2.876 (1.14)
Small Firm	L.comm_gdp	0.143 (1.06)			0.460 (1.03)			0.822* (1.66)		
	L.rural_gdp		2.148 (1.04)			-7.649* (-1.76)			-4.964 (-0.98)	
	L.sharia_gdp			0.209 (0.16)			3.816 (0.85)			4.893 (0.95)
Medium Firm	L.comm_gdp	0.110 (0.59)			-0.156 (-0.63)			0.0800 (0.27)		
	L.rural_gdp		-0.721 (-0.45)			-4.913** (-2.13)			-7.177*** (-2.81)	
	L.sharia_gdp			3.63** (2.21)			-0.894 (-0.37)			2.288 (0.85)
	Control var included	YES	YES	YES	YES	YES	YES	YES	YES	YES
	Year fixed effect	YES	YES	YES	YES	YES	YES	YES	YES	YES

5.   Discussion

We investigate whether the financial development influence firm's performance. Table 3 and 4 shows that the effect of regional financial development on firm's performance are significant. In all-region, formal lending is significantly positive affects firm performance. The result is same when we use subsample developed region but no effect for less developed region. A negative and significant effect is obtained between lending from other sources to firm's performance. On the contrary, the positive and significant correlation is shown in less developed region. Arguably, firms are able to access finance in developed region. The well-developed financial system ease firm to raise capital from bank, hence increase firm's productivity and performance. However, people in less developed area tend to use informal lending because of the lack of lending from formal sector.

Considering the formal and informal sources as well as the size of firms (shown in Table 5), we find that formal lending significantly affects firm's performance for micro, small, and medium-size firm. However, the effect of lending from informal sources is negative and significant.

The other estimations are constructed to analyze which of type of bank affects firm's performance. In general, lending from commercial, rural and sharia bank matter in shaping firm's performance (Table 6). However, the effect is different when we do subsample based on the level of development of a region (Table 7). The lending from the commercial and rural bank are more beneficial for firms in developed region, but not the firms in less developed region. As explained before, firms in less developed area are not really able to obtain capital from bank. Therefore, bank lending are not significantly affects firm's performance. Regarding the market share of bank, there is no significant effect between the market share of bank commercial, rural, and sharia bank.

Furthermore, we go deeper on firm's performance based on the size of firms. Table 8 shows that commercial and rural bank have positive and significant effect on firm's performance. To be more details, we test the effect by distinguishing based on the level of development of a region. Lending based on the type of bank in less developed region have different result. Table 9 shows that in developed area, we find positive and significant relationship between lending from commercial and rural bank in micro-size firms' performance. The effect of bank lending from commercial, rural, and sharia bank also affects the performance of small and medium-size firms, but the performance of large firms only affected by the lending of commercial and sharia bank. As explained before, large firms required big amount of finance. Therefore, they tend to lend whether from commercial or sharia bank, because the lending from rural bank is limited.

Table 10 shows that we find positive significant relationship between lending of sharia bank to micro, and medium firms' performance. Surprisingly, the link between lending from rural bank to firms in less development is negative and significant. At first, we expect that lending from rural bank will be more beneficial for SMEs since they are able to do better with relationship lending, as explained in many existing literatures. However, we find the contrary. We find that sharia bank are more beneficial. The possible argument is, sharia bank, which mostly new for the community in a region, try to play new role and to fill the gap in the lack of finance faced by the community. Mostly sharia bank in Indonesia developed in 2007 and that is the start year of the observation of this study. While rural bank in a region is already established long before. So, the presence of sharia bank is something new for the community and sharia banks tend to ease the collateral requirement for enterprises (Shaban et al. 2014). The development of sharia bank in a region may decreasing the market share for rural bank, thus the effect becomes negative. The obser-

vation of the effect of bank lending to large firm's performance is omitted since lack of large firms in the less developed region.

6.   Conclusion

This work examines the relationship between regional financial development firm's performances by looking at local banking market. In our study, we combine two unique datasets on the macro and firm-level data in Indonesia over the period 2007-2013.

As a result, we provide interesting evidences. We find that the lending has positive relationship with firm's performance. The effect is different depending on the level of economic development. The lending from commercial and rural bank is positively correlated with the firm's performance in developed region. However, in less developed region, rural bank has a negative relationship with the firm's performance. The effect of lending to firm's performance is also different based on the size of the firm. Lending from commercial, rural, and sharia bank positively linked with the performance of small, medium, and large firm's performance.

We contribute to the literature by investigating the role of local banking structure in a dual banking market. The results have some policy implications. Improving and promoting lending to firms will boost the economic growth and accelerate firm's performance. Firms might also take consideration to find the source of finance other than banks. The study of finance – growth nexus considers non-liner relationship; we suggest to test also on non-linear relationship on firm's performance for the future study.

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