

Land Titling and Mortgage Right and Its Impact on Financial Deepening, Investment and Economic Growth in East Java

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ABSTRACT

This paper aimed at analysing the impact of a Complete Systematic Land Titling (PTSL) and mortgage rights on financial deepening, investment and economic growth in East Java. This study utilized secondary data of 38 regencies/cities in East Java in 2017-2018. The method used was the simultaneous equation model with TSLS approach. Endogenous variables in this study were financial deepening, investment and economic growth, while the exogenous variables used were land titling, mortgage rights, loan interest rates, income per capita, infrastructure expenditure to RGDP ratio, average length of schooling and labour. The results of this study indicated that land titling had a significant effect on financial deepening but it did not affect investment. Furthermore, mortgage rights had a significant effect on financial deepening and investment. Moreover, land titling and mortgage rights through financial deepening and investment had a significant effect on economic growth in East Java.

Keywords: PTSL, mortgage, financial deepening, investment, economic growth, TSLS

1. INTRODUCTION

Land titling aims to provide legal certainty of land ownership and provide opportunities for the landowners to get easy access to credit (financial inclusion) [1,7]. The principle of financial inclusion is basically removing barriers to financial access with the result that the public can benefit from financial services which are expected to have an effect on increasing income and reducing poverty [2]. The impact of increasing community income at the individual level related to financial inclusion is expected to be able to increase community income in an aggregate in an area which will ultimately have an impact on the economic growth, poverty reduction and inequality decrease as well as increasing financial system stability [3, 18, 19, 20].

Strengthening of land rights (Land Tenure) is closely related to low or high investment in an area. The stronger (legally) the land tenure will encourage investment in land. [4, 8, 9]. Land titling activities are closely related to the Ease of Doing Business (EoDB). One of the components of EoDB is the ease of registering assets (Registering Property).

Previous research states that land titling will increase the value of land and provide an opportunity to obtain credit/loan from banks for venture capital so as to improve the welfare of landowners [5]. Another researcher also points out that land titling guarantees legal certainty [6]. Studies on the impact of land titling on economic growth are still scarce in Indonesia, therefore this study

complements the lack of studies on the impact of land titling on the economic growth. Thus, the purpose of this study is to determine the impact of land titling and mortgage rights on financial deepening and investment, as well as how land titling and mortgage rights through financial deepening and investment can have an impact on the economic growth in East Java.

2. RESEARCH METHOD

This research was a quantitative study using secondary data sourced from Central Bureau of Statistics (BPS), Bank Indonesia (BI), Investment Department and One-stop Integrated Services (DPMPTSP) and Ministry of Agrarian Affairs and Spatial Planning/National Land Agency (ATR/BPN). This study utilized panel data of 38 regencies/cities in East Java for 2 years (2017-2018). The data analysis technique used was the Simultaneous Equation Model (SEM) with the Two Stage Least Square (TSLS) approach. In this model, financial deepening (FD), investment (INV) and economic growth (EG) were treated as endogenous variables, while loan interest rates (r), land titling (LT), value of mortgage (HT), income per capita (PCAP), ratio of infrastructure Expenditure to RGDP (INFPDRB), average length of schooling (RLS) and labor (L) were treated as an exogenous variable.

The relationship between the aforementioned variables is explained in the following equation system:

$$\begin{aligned} \text{FD } it &= \alpha_0 + \alpha_1 r \text{ } it + \alpha_2 \text{LT } it + \alpha_3 \text{HT}it + \alpha_4 \text{PCAP } it \\ &+ \varepsilon \text{ } it \end{aligned} \quad \dots (1)$$

$$INV_{it} = \beta_0 + \beta_1 FD_{it} + \beta_2 LT_{it} + \beta_3 HT_{it} + \beta_4 INFPDRB_{it} + \varepsilon_{it} \quad \dots (2)$$

$$EG_{it} = \sigma_0 + \sigma_1 FD_{it} + \sigma_2 INV_{it} + \sigma_3 INFPDRB_{it} + \sigma_4 RLS_{it} + \sigma_5 L_{it} + \varepsilon_{it} \quad \dots (3)$$

- Where,
- $\alpha_0, \beta_0, \sigma_0$: A constanta
 - r : Loan/credit interest rates (%)
 - FD : *Financial Deepening*, which is calculated from the ratio of privat loan to RGDP (%)
 - LT : Number of PTSL Plots (Thousand Plots)
 - HT : Value of Mortgage (Trillions of Rupiah)
 - PCAP : Income per capita (Million Rupiah)
 - INV : Number of Domestic Direct Investment (DDI) and Foreign Direct Investment (FDI) (Trillions of Rupiah)
 - INFPDRB : Share Infrastructure Expenditures on RGDP (%)
 - EG : Economic Growth calculated from the value of RGDP at constant prices (Trillions of Rupiah)
 - RLS : Average Length of School (Years)
 - L : Number of Labor/Workers (Million People)
 - subskripsi* : Symbolizes Regency/City
 - i* : Regency/City 1,2,3,...,38
 - subskript* : Symbolizes time
 - t* : From 2017 to 2018
 - ε : Galat (Error Term)

The hypothesis proposed in this study include: (1) Land titling and mortgage rights were believed to have a significant effect on financial deepening; (2) Land titling and mortgage rights were believed to have a significant effect on investment; (3) Financial deepening and investment resulting from the implementation of the PTSL program were believed to have a significant effect on economic growth in East Java.

3. RESULT AND DISCUSSION

In the simultaneous equation model, inter-equation models had a relationship, so the equation built was a system equation [21]. Financial deepening, investment and economic growth were interrelated with one another. Land titling and mortgage rights did not have a direct impact on the economic growth, but through financial deepening and investment.

The estimation results of the simultaneous equation model constructed are presented in the following table:

Table 1. The estimation results of the simultaneous equation model parameters

MOD EL	VARIABLE	PARAMETER ESTIMATION	P VALUE
<i>Financial Deepening</i> (FD)	Constanta	-48.79747	0.226
	Loan Interest Rates (r)	15.87659	0.037*
	Number of Land Plots (LT)	-	**
	Value of Mortgage (HT)	0.2742989	0.006*
Investasi (INV)	Income per capita (PCAP)	1.050359	0.000**
	Constanta	0.0880154	0.015*
	<i>Financial Deepening</i> (FD)	-	
	Number of Land Plots (LT)	0.7312272	0.179
Pertumbuhan Ekonomi (EG)	Value of Mortgage (HT)	-	0.190
	Ratio of Infrastructure Expenditure to RGDP (INFPDRB)	0.0435753	0.000**
	Ratio of Infrastructure Expenditure to RGDP (INFPDRB)	-	0.012*
	Average length of school (RLS)	0.0197987	*
Pertumbuhan Ekonomi (EG)	Ratio of Infrastructure Expenditure to RGDP (INFPDRB)	1.487783	
	Constanta	0.2782547	
	<i>Financial Deepening</i> (FD)	27.55107	0.200
	Investment (INV)	-1.700729	0.000**
Pertumbuhan Ekonomi (EG)	Ratio of Infrastructure Expenditure to RGDP (INFPDRB)	6.89631	**
	Constanta	-2.316005	0.000**
	Ratio of Infrastructure Expenditure to RGDP (INFPDRB)	6.909615	*
	Average length of school (RLS)	0.0149667	0.011*

Number of Labor (L)	0.220
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Source: Results of Data Processing by the Researchers

Note: *) significant at $\alpha=10\%$; **) significant at $\alpha=5\%$; ***) significant at $\alpha=1\%$.

Based on the above table, it could be seen that the loan interest rate (r), the number of registered land plots (LT), the value of mortgage (HT) and income per capita (PCAP) had a significant effect on the financial deepening. Interest rates and value of mortgage rights had a significant positive effect, while the number of registered land plots and income per capita were significantly negative. These results were in line with previous research which pointed out that loan interest rates had a significant positive effect on the financial deepening [1], but the variable of number of registered land plots and income per capita had a significant negative relationship, which was different from previous studies conducted [1]. It shows that the number of registered land plots did not necessarily increase the financial deepening if the certificate was not used as collateral in obtaining loan/credit from banks. Income per capita was also negative, meaning that the higher the income per capita, the financial deepening decreased. In this case, it means that when someone's income increased, he/she did not need to borrow money/credit to the bank.

The impact of land titling and mortgage rights on investment showed that the variable of number of land plots (LT) and financial deepening (FD) had no significant effect on investment. It was different from previous empirical evidence [4, 8, 9] that land with clear legal status would provide more stimulus for investment, while the impact of financial deepening had no effect on the investment because there were no previous studies that reinforced the notion that financial deepening had a positive effect and significant to investment. On the other hand, mortgage rights (HT) and the ratio of infrastructure expenditure to RGDP (INFPDRB) had a positive and significant effect on investment. This is in line with previous studies that adequate infrastructure in an area would encourage investors to invest capital in the area [9]. Mortgage rights related to the amount of credit issued by banks. The higher the value of mortgage rights, the higher the accumulation of capital, so the capital could encourage investment.

Financial deepening and investment together with other growth variables such as the availability of adequate infrastructure in this study were proxied by the ratio of local government infrastructure expenditure to RGDP (INFPDRB) plus the human capital variable which was the average length of school (RLS) and labor (L) analyzed to

find out how its influence on the economic growth in East Java. The result was that investment variable (INV) and average length of schooling (RLS) had a significant positive effect, while financial deepening (FD) and the ratio of infrastructure expenditure to RGDP (INFPDRB) had a significant negative effect on the economic growth in East Java. The variable of labor (L) did not significantly influenced the economic growth in East Java.

Neo-classical theory affirmed that the accumulation of capital and labor could drive economic growth [10]. In its development, one of the classical economic figures, Robert Solow added human capital in the economic growth model, but it was exogenous. There was then a new growth theory which name was endogenous growth theory by Romer to perfect the Solow model by adding technological variables and being endogenous [10, 11].

Investment (INV) had positive and significant effect to economic growth. It was in line with Harrod-Domar's theory and neo-classical theory in general which pointed out that investment could encourage the economic growth [10]. Likewise, the average length of school (RLS) meant that to achieve high levels of growth, it had to be supported by human resource skills and technological mastery [11, 12, 15, 17]. In addition, financial deepening and infrastructure expenditure negatively affected the economic growth. It was different from some previous results which stated that financial deepening could increase the economic growth [1, 3, 13, 14]. The same thing was also found that infrastructure expenditure negatively affected the economic growth, which was different from the previous empirical evidence that infrastructure development could encourage the economic growth [16]. Researchers believed that infrastructure in the short term could not immediately experience the effect. The existence of infrastructure would increase efficiency and reduced transaction costs so that in the long run it was able to accelerate economic growth [10, 16].

4. CONCLUSION

Land titling through the PTSL program had a guaranteed impact on legal certainty and easy access to get loan/credit from banks (*financial inclusion*) since land title certificates could be used as a collateral. Mortgage as an effect of land certificates that were used as collateral would encourage financial deepening and investment. On the other hand, land titling had a significant negative relationship to the financial deepening and had no significant effect on the investment.

This study found the fact that financial deepening had a significant negative relationship with the economic growth in East Java. It was different from the empirical evidence of the previous research which found that financial deepening had a significant positive relationship on the economic growth [1]. Therefore, it could be concluded that financial deepening as a result of the implementation of the PTSL program had not been able to encourage the economic growth. On the other hand, investment as a result of the implementation of PTSL program was able to encourage the economic growth in East Java. It was of

course accompanied by other growth variables, namely the increase in average length of schooling.

5. POLICY IMPLICATION

The study found that investment and human resource capacity building were the main key to accelerate economic growth in East Java. Therefore, the provision of adequate infrastructure both physical infrastructure such as roads, bridges, ports, irrigation channels and others as well as social infrastructure such as hospitals, school buildings, city parks etc. was a necessity to attract investors to invest in East Java [12, 15, 16, 17]. Regulations related to business licenses should be simplified and followed by good governance.

Accordingly, it is important to continue the PTSL program in order to ensure legal certainty of ownership of land rights and provide opportunities for landowners to access credit in financial institutions (*financial inclusion*). The ease in registering land (registering property) will encourage the ease of starting a business/investment (EoDB) which indeed will accelerate the economic growth in East Java.

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