




MODERATION EFFECTS OF ORGANISATIONAL ENVIRONMENT ON THE RELATIONSHIP BETWEEN CAPITAL STRUCTURE AND FINANCIAL PERFORMANCE OF CENTRAL JAVA RURAL BANKS, INDONESIA



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ABSTRACT

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The purpose of this study is to investigate the moderating effects of the organizational environment on the relationship between capital structure and rural banks' performance. The samples have been collected from 241 rural banks of Central Java for the present study to analyze the moderating effects, and data are collected through its Financial Services Authority (FSA) website. Moderating Regression Analysis (MRA) is used to evaluate the impact of moderation. The capital structure as measured by the ratio of total debt to total assets and total equity both have a significant negative effect on ROA and ROE. The effects of savings and loans have a negative impact on ROA and ROE. While, debt in other forms has no significant effect. Thus, the increase in savings and loans can reduce the performance of rural banks. The effect of organizational environment moderation on the relationship between capital structure and the performance of rural banks shows different results: (1) environment munificence has a positive moderation effect on the relationship between capital structure (total debt, savings and loan) and ROE; (2) environmental dynamism has a positive moderation effect on the relationship between capital structure (total debt, savings and loan) and ROA; (3) environmental complexity has a positive moderation effect, especially on the relationship between other debt and ROE.

Contribution/ Originality: This paper contributes to the existing capital structure literature, particularly on microfinance. Furthermore, this study provides a unique contribution to the management of microfinance in controlling the debt that is adjusted to the environmental conditions of the organization.

1. INTRODUCTION

The role of the Rural Bank (RB) of Indonesia is beneficial especially in providing funds to improve the economy of the community in the micro sector. The role of RB is demonstrated by the lush growth of Rural Banks in various regions. Besides that, various efforts have been made by RB to help the community by giving awareness to the community to be fond of saving money and giving credit or loans to Small and Medium-sized Enterprises (SMEs). At present (2018), the number of RBs in the Central Java region is 280 units. On average, the financial growth is quite good, so that regional economic programs can run and provide a strong foundation to maintain financial industry stability. Its assets are now 26.8 trillion rupiahs (22.98% of all Indonesian Rural Bank assets) and grow

12.86 per cent. Credit distribution is 20.4 trillion rupiahs, and has grown up to 11.94 per cent from the previous year. Third-party funds have reached 20 trillion rupiahs, and have grown up to 12.75 per cent from last year. This is where the role of RB is beneficial especially in the provision of funds to improve the economy of the community in the micro sector.

Although the overall performance of the RB is satisfactory, it does not mean that the RBs in Central Java is not experiencing problems. This is indicated by the presence of several RBs that show poor performance. Some RBs are put under special supervision due to several things. For example, capital is less than 4 per cent, and liquidity is less than 3 per cent. Besides that one that can erode the health of rural banks is a high NPL (Non-Performing Loan). NPLs are more than 5 per cent, which means bad credit, and there is no deposits and interest rates, so capital is eroded. From this data, it can be concluded that on the one hand there are many RBs that have good development rates, and the role of RBs are still very strategic in providing banking services, especially to SMEs. On the other hand, there are some RBs that do not develop and even go out of business, so the challenges of the external environment for RBs must be considered.

Previous studies have examined the effect of capital structure on performance, but show different results. Some findings show a positive relationship (Abor, 2005; Arbabiyan and Safari, 2009; Umar *et al.*, 2012), but contrary to this, the results of some other studies show a negative relationship (Abdel-Jalil, 2014; Ramadan and Ramadan, 2015). Besides that, there are some studies that show insignificant results (Ebaid, 2009; Al-Taani, 2013). Furthermore, the study of Muigai (2017) has found that debt generally increases the incidence of financial difficulties in non-financial companies in Kenya. It is identified from the results of studied literature that there is a gap that is the inconsistency of the results of capital structure on financial performance; it needs to be studied further. According to Ferri and Jones (1979), the effect of capital structure on performance depends on the company adapts to the environment. The opinion of other researchers also supports this finding that the survival of a company is highly dependent on the company's adaptation to environmental changes (Staber and Sydow, 2002; Dalziell and McManus, 2004). The model discussed in this study draws basic inspiration from the contingency theory because the microfinance services industry is characterized by intense competition and cannot operate separately from the external environment. The literature reveals that research focuses on the effects of the business environment, especially those relating to large companies, and the results are inconsistent. Accordingly, the study of Atinc and Ocal (2014) shows that there is a negative effect of the environmental complexity on the relationship between the rate of change in the board of directors and firm performance. Long-established companies that have large assets and high liquidity that operate in a good munificence environment then they follow the pecking order theory (Haron, 2018). While the study of Winarno and Tjahjadi (2017) shows that the industry environment does not moderate the relationship between the IT asset's portfolio and operational efficiency, however, environmental conditions will affect the policies of the company's managers that have an impact on performance.

Based on the reviewed literature, it comes to know that no studies are investigating the moderating effects of the organizational environment on the relationship between capital structure and performance in the microfinance context. Considering this, the present study is intended to fill this gap by offering an exploration of the role of organizational environment moderation on the relationship between capital structure and performance that occurs in microfinance institutions (MFIs). The purpose of this study is to investigate the influence of moderation of the organizational environment (munificence, dynamism and complexity) on the relationship between capital structure and performance. Furthermore, this study contributes specifically to rural bank managers or other microfinance institutions (MFIs) in increasing or reducing debt adjusted to the environmental conditions of the organization. This paper can provide useful insights for interested stakeholders, such as customers, depositors, borrowers and investors.

2. LITERATURE REVIEW

2.1. Capital Structure

Capital structure is corporate financing consisting of long-term debt, preferred shares and shareholder capital (Horne *et al.* (2008)). From these notions, the capital structure is the financial composition between short-term debt, long-term debt, and own capital that is used to run company activities. Therefore, this capital structure policy is essential for the company because it will have a direct impact on the company's financial position.

According to the trade-off theory, the company will owe at a certain level, because it can save tax from additional debt that is equal to the cost of financial difficulties (Myers, 2001). Companies that have high profitability tend to reduce taxes by increasing debt, so they must pay interest and can reduce income taxes. Furthermore, the pecking order theory explains why companies that have higher levels of profit actually have smaller debt levels. According to this theory revealed by Donaldson (1961), there is a financing hierarchy: retained earnings known as sources of internal funding, loans and issuance of new equity. It is said that internally generated funds are preferred because the costs of using this source are lower than others and then used for debt before issuing new equity. The implication of this decision is that debt is a signal of the need for external financial sources and is less likely to send a signal to investors when compared to issuing new equity. Meanwhile, according to the agency theory approach, policies to regulate capital structure are aimed at reducing conflicts between various interest groups. The manager of the company will maintain the resources in order to control it. Policies to reduce or increase debt are a way to reduce agency conflict. If the company takes the debt the company will be forced to pay interest in cash.

2.2. Application of Capital Structure Theory in Rural Banks

Sources of bank funds for operational needs can be divided into three sources, namely funds originating from own capital, loans and the community. Funds originating from own capitals are often referred to as first-party funding sources, namely funds originating from within the bank, both shareholders and other sources. Funds originating from these loans are often referred to as second-party funds, which are sources of funds originating from loans of other banks and other financial institutions to banks. Funds originating from the community are often referred to as third-party funding sources, namely sources of funds that come from the community as customers in the form of savings and deposits. Thus, it can be seen that banks increase capital using deposits that are different from non-financial companies. However, deposits and savings are considered as a vital source of funding for rural banks.

Several studies have shown that savings or deposits from bank customers are an optimal form of financing for banks (Diamond and Dybvig, 1983; Diamond, 1984). Therefore, the reviewed literature tends to treat savings or deposits as another form of debt. In this study, the authors attempt to treat deposits as debt for the following reasons: deposits from customers are to the right of the balance sheet which means that it is the bank's obligation. Besides, banks must pay interest on these deposits and savings. Finally, banks can use financial resources for lending activities to get profits while companies use debt to fund new projects or working capital. It appears that the whole process is similar to a corporate loan. Next, the authors want to apply three theories, such as those mentioned above, to see the mechanism of a bank's structural capital. If we treat deposits as debt we can say that the rationality of the three theories remains. Thus, the capital structure of RB is a mixture of debt and equity. The capital structure for RB is very important in how RB finances its overall operations and growth by using various sources of funds. Therefore, the capital structure in the context of a microfinance company is a combination of all loans (savings, deposits, deposits from other banks and loans received) when compared to equity. While its use is in the form of credit so that it can produce results that are the difference between the interest charged and the interest that must be borne, therefore, if a rural bank needs funds it can be met with loans (external) or by increasing capital (internal).

2.3. Impact of Capital Structure on Performance

It has been reviewed that many empirical studies have been conducted to analyze the effect of capital structure on bank performance. Some studies show positive effects, but others show negative effects. In fact, several studies have revealed that bank performance is a determinant of capital structure. The study of [Bandt et al. \(2014\)](#) has found that modification of capital structure requires time to influence bank profitability in terms of Return on Equity (ROE). The study of [Nikoo \(2015\)](#) confirms the positive impact of capital structure on ROE and Return on Assets (ROA) of banks registered in Tehran during the 2009–2014 period. Likewise, [Goyal \(2018\)](#) study reveals the positive impact of short-term debt on bank profitability in India as measured by ROE and ROA. Instead, [Saeed et al. \(2013\)](#) revealed a significant negative relationship between long-term debt capital and ROE and ROA in Pakistani banks over the period of 2007–2011. Likewise, [El-Masry \(2016\)](#) found that bank ROA is negatively related to debt ratio. Furthermore, [Siddik et al. \(2017\)](#) conducted in Bangladesh banks during the 2005–2014 period revealed that capital structure is inversely proportional to ROE and ROA. In the context of commercial banks, several studies have shown inconclusive results. Several studies have revealed that bank performance is a determining factor of capital structure. [Rajha and Alslehat \(2014\)](#) have found a positive impact of the Equity Ratio, Total Assets and Financing Ratio to Total Assets on the performance of Islamic banks in Jordan. In contrast, [Siddik et al. \(2017\)](#) found that capital structure is inversely proportional to bank performance. Likewise, [Gohar et al. \(2016\)](#) and [Nwude and Anyalechi \(2018\)](#) show that the capital structure is negatively related to bank performance in Pakistan and in Nigeria. In the context of microfinance, most of the studies have shown results similar to commercial banks. [Duguma and Han \(2018\)](#) showed that, among the deposits mobilization variables, the deposit to loan ratio, deposit to total asset ratio, the volume of deposits, and demand deposit ratio have a significant direct impact on financial sustainability. The same finding has been conveyed by [Butsili and Miroga \(2018\)](#) that debt-equity influences the profitability of microfinance bank positively, and it has significantly accounted up to 88.6% change in profitability. The study of [Vishnu \(2019\)](#) also shows that the capital structure has a significant impact on the financial performance of the banks in India. On the contrary, [Waweru \(2016\)](#) found that capital structure does not significantly influence the profitability of MFIs. Several studies in Indonesia have also shown similar results. Capital Adequacy Ratio (CAR) and Financing to Deposit Ratio (FDR) are slightly influential and have insignificant effect toward ROA of Islamic Rural Banks in Indonesia ([Irwan, 2017](#)). In contrast, ROA of rural banks in Indonesia is not effected by CAR ([Kusmayadi, 2018](#)).

From these kinds of literature, it shows that the effect of capital structure on bank performance cannot be determined. Therefore, the bank's capital structure will remain stable at the minimum level required by the financial authority. Small and large banks often do not exceed the requirements set by regulations to avoid high fees ([Mishkin, 2000](#)). Rural banks will add debt in financial difficulties, especially to lend their customers or pay interest. Based on this elaboration, capital structure is expected to have a negative effect on the performance of rural banks, in terms of total debt, savings, loans and other debts.

2.4. The Moderating Effect of the Organizational Environment

Extensive research development in the last forty years has sought to explore the effects of the environment on organizational strategy, structure, processes and results. Today's findings, researchers often try not just to look for simple bivariate causal relationships, but try to understand what can change (moderation) the relationship between two variables ([Frazier et al., 2004](#); [Rose et al., 2004](#)). The organizational strategy depends on the moderating effect of the environment in which the organization operates ([Prescott, 1986](#); [Kotha and Nair, 1995](#)). [Ward and Duray \(2000\)](#) argue that the impact of the business environment has long been recognized as an essential contingency factor. This study explains how environmental variables function as moderators in the relationship between company strategy and organizational performance. From a theoretical point of view, this finding provides another relationship between capital structure and firm performance. The moderate role played by the environment is

documented empirically (Priem *et al.*, 1995; Gilley *et al.*, 2004). Therefore, the choice of debt and equity levels depends on internal and external factors in the company's operating environment that can affect company performance (Bei and Wijewardana, 2012). There is significant research that empirically shows the context-dependent relationship between the rationality of decision processes and company performance (Goll and Rasheed, 1997). The approach of Dess and Beard (1984) argues that the elements of an organizational environment can be seen in three states of munificence, dynamism, and complexity. Munificence, in general, refers to the ability of the environment to support the sustainable growth of an organization (Aldrich, 1979). This means if an industry with high munificence has many resources but with low competition, therefore, increases the profitability. Although research on independence is still limited, its impact on organizational strategy has been well documented.

The study results of McArthur and Nystrom (1991) show that the munificence environment provides a positive moderation effect on the relationship between capital intensity and Return on Investment (ROI). Companies that are old and have assets and a high level of liquidity operating in high environmental munificence then follow the pecking order theory (Haron, 2018). Likewise, the results of Wang *et al.* (2019) show that environmental munificence can negatively moderate the relationship between inventory leanness and venture survival. Therefore, in this study, it is expected that environmental munificence has a positive moderation effect on the relationship between capital structure and rural bank performance.

Environmental complexity is an organizational environment that is considered as an important aspect in strategic management (Aldrich, 1979). Environmental complexity specifically refers to heterogeneity and concentration of organizational activities (Dess and Beard, 1984). Environmental complexity is generally seen as more competitors and lack of resources (Mitcell *et al.*, 2011). The researchers have examined the moderate role of environmental complexity in the relationship between corporate strategy and operational performance, and the result is negative moderation. The results of Atinc and Ocal (2014) have shown that the negative relationship between the level of changes in the board of directors and company performance is exacerbated by environmental complexity.

The results of another study have shown similar results, where environmental complexity can be negatively moderate the relationship between inventory leanness and venture survival (Zhu *et al.*, 2018). If the high level of competition shows a high complexity, then the additional debt of an MFI will be more challenging to use it so that it produces a low profit. Therefore, in conditions of high complexity, it can weaken the relationship between capital structure and performance. Environmental dynamism generally describes the rate and instability of changes in a firm's external environment (Dess and Beard, 1984). If the company's environmental conditions are not stable it will have a negative effect. Several studies of the moderating effects of environmental dynamism on the relationship between company strategy and company performance show negative results. Wang and Li (2008), who examined large companies in the US, showed that the negative effect of search deviation on organizational performance varies to environmental dynamism. Likewise, the study of Wang *et al.* (2019) finds that environmental dynamism can be negatively moderate this relationship. Therefore in this study, it is expected that the moderating effect of the environmental dynamism on the relationship between capital structures is negative.

Based on the literature review, the conceptual model in this study can be described, as shown in Figure 1.

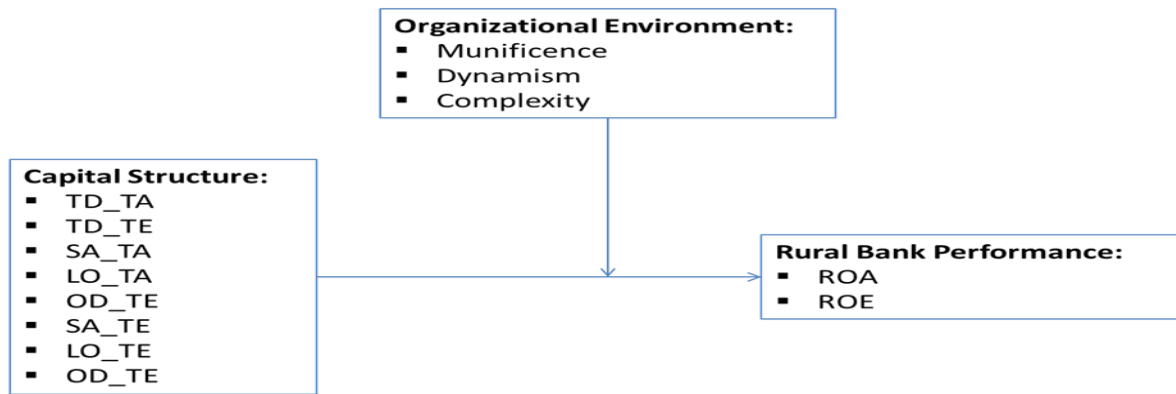


Figure-1. Conceptual framework for moderating effects of organizational environment in the relationship between capital structure and rural bank performance.

3. METHOD

3.1. Collecting Data

There are 280 RBs in Central Java. Out of 280 RBs only 241 completed the data from 2014 to 2018 in the form of financial statements (income statement and balanced). The authors have accessed the data through the website of the Financial Services Authority (FSA). In this analysis, the authors use the last year (December) data reported from each RBs. This dataset is called cross-sectional data because all observations originate from one particular time point and represent individual econometric entities that are different from the same time (Studenmund, 2011).

3.2. Selection and Measurement Variables

This study consists of three main variables, namely capital structure, performance and organizational environment. The proxies represent these three variables, as shown in Table 1.

Table-1. Variables, notation and proxies of the research.

| Variables | Notation | Proxies |
|-----------------------|-------------------|---|
| Dependent variables | ROA | Return on Asset |
| | ROE | Return on Equity |
| Independent variables | TD_TA | Total Debt to Total Asset |
| | SA_TA | Saving to Total Asset |
| | LO_TA | Loan to Total Asset |
| | OD_TA | Others Debt to Total Asset |
| | TD_TE | Total Debt to Total Equity |
| | SA_TE | Saving to Total Equity |
| | LO_TE | Loan to Total Equity |
| | OD_TE | Others Debt to Total Equity |
| Moderation variables | MUN (Munificence) | The slope coefficient of the operating profit regression for the period 2014-2018 |
| | DYN (Dynamism) | The standard error of the regression slope coefficient is divided by the average operating profit for 2014-2018 |
| | COM (Complexity) | The ratio of the total assets of the company to the total assets of all Rural Banks in the region. |

3.3. Independent Variables

The purpose of this study is to investigate the effect of capital structure decisions on rural bank performance, and the capital structure variable is an independent variable. To facilitate the overall effect of capital structure on bank performance; the present study uses TD_TA, SA_TA, LO_TA and OD_TA as capital structure variables. In addition, TD_TE, SA_TE, LO_TE and OD_TE are used to measure the debt to equity ratio. TD_TA as the ratio of total debt to total assets, SA_TA as the ratio of debt in the form of savings to total assets, LO_TA as the ratio of loans to total assets, and OD_TA as the ratio of other debts to total assets. Meanwhile, to measure the ratio of debt

to equity, TD_TE is measured by ratio of total debt to total equity, SA_TE is measured by ratio of debt in the form of savings to total equity, SA_TA is measured by ratio of debt in the form of loans to total equity, and OD_TE is measured by ratio of other debts to total equity.

3.4. Dependent Variables

In this study, two measures of profitability are used where one indicates that company management uses total assets to generate profit (Return on Assets) and the other shows how well management uses debt and equity capital to increase corporate profitability (Return on Equity).

3.5. Moderating Variables

Environmental munificence is operationalized as the rate of income growth that is the regression slope coefficient for 2014-2018 periods. Environmental dynamism is the capacity of the environment to support sustainable growth. Environmental dynamism is operationalized as the standard error of the regression slope coefficient divided by the industry average for 2014-2018 (Dess and Beard, 1984; Rasheed and Prescott, 1992). While the Environmental complexity of the environment is measured by the ratio between the total assets of the company and the total assets of the industry in the region (McArthur and Nystrom, 1991).

3.6. Data Analysis

Multiple regression analysis is used to examine the effect of capital structure on RB performance. This technique is a method to explore the relationship between one dependent variable and several independent variables. Next, Moderated Regression Analysis (MRA) is used to analyze the effects of moderation. Regression analysis was carried out to identify the relationship between capital structure, performance and the moderating effect of the organizational environment. Here the capital structure is an independent variable, and company performance is the dependent variable and organization environment is moderating variable. From these independent, dependent and moderation variables, the following relationships are formulated. To test these two relationships, the authors have used a multiple regression model with interaction terms (Jaccard *et al.*, 1990).

$$Y = a + bX + cMo + dX*Mo + e$$

Where Y denotes the performance (ROA or ROE); X denotes the capital structure (TD-TA, TD_TE, SA_TA, LO_TA, OD_TA, SA_TE, LO_TE, OD_TE); Mo denotes the potential moderator (Munificence, Dynamism, Complexity); and e represents the error term. These procedures have been extended in this project to analyze multiple predictors and their associated multiple interaction terms.

4. EMPIRICAL RESULT AND DISCUSSION

4.1. Descriptive Analysis

Figure 2 shows the development of the elements of total assets, savings, deposits, liabilities and equity from 2014 to 2018. From this data, it can be explained that the elements of the capital structure have experienced almost the same growth of around 16.50% annually. Thus, it can be explained that the growth rate of Rural Bank in Central Java is 16.50% per year.

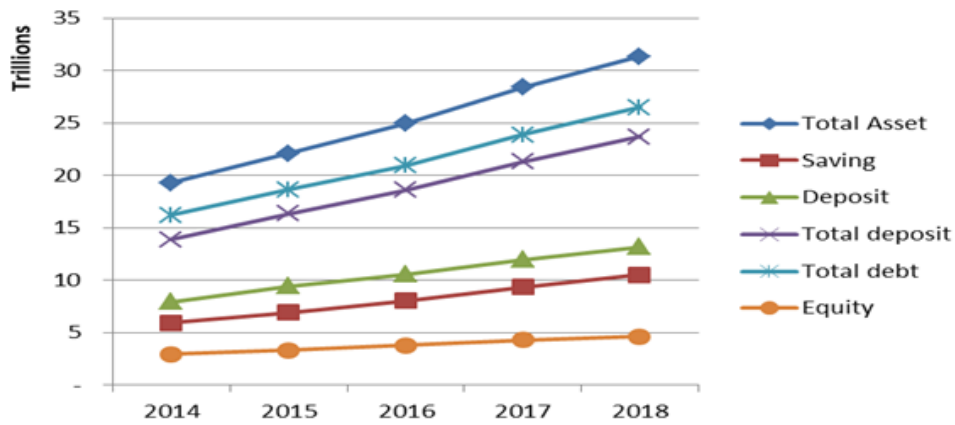


Figure-2. Total asset, saving, deposit, total deposit, total debt and equity of rural bank (2014-2018).

Figure 3 shows the development of the total elements of net income and non-operational income, and operating expenses from 2014 to 2018. From this data, it can be explained that the elements of revenue have experienced almost the same growth, which is approximately 11.50% annually except for non-operational income that tends to be negative at 19.73%. Thus, it can be explained that the growth rate of Rural Banks' income in Central Java is 11.50% per year.

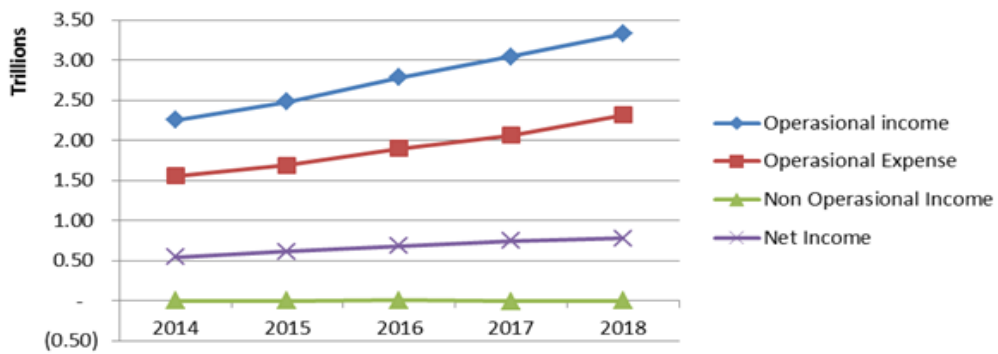


Figure-3. Operational income, operational expense, non-operational income and net income of rural banks (2014-2018).

Table-2. Descriptive Statistic.

| Descriptive statistics | | | | | |
|------------------------|-----|---------|---------|--------|----------------|
| | N | Minimum | Maximum | Mean | Std. Deviation |
| TD_TA | 241 | 0,50 | 0,95 | 0,8200 | 0,07938 |
| TD_TE | 241 | 1,01 | 17,13 | 5,5156 | 2,57948 |
| SA_TA | 241 | 0,28 | 0,93 | 0,7053 | 0,13472 |
| LO_TA | 241 | 0,00 | 0,53 | 0,0963 | 0,12438 |
| OD_TA | 241 | 0,00 | 0,28 | 0,0170 | 0,02277 |
| SA_TE | 241 | 0,28 | 0,93 | 0,7053 | 0,13472 |
| LO_TE | 241 | 0,00 | 4,24 | 0,6683 | 0,96131 |
| OD_TE | 241 | 0,01 | 1,75 | 0,1039 | 0,14101 |
| MUNIFICENSE | 241 | -8,88 | 18,08 | 1,6957 | 3,44860 |
| DYNAMISM | 241 | 0,00 | 157,25 | 6,1899 | 16,76815 |
| COMPLEXITY | 241 | 0,00 | 1,00 | 0,1383 | 0,18323 |
| Valid N (ListWise) | 241 | | | | |

Table 2 shows descriptive statistics related to the dependent, independent and moderation variables. From this data, it shows that 82.00% of Rural Banks' assets are financed from debt, of which 70.53% is in the form of savings and 9.63% in the form of loans. This finding shows the fact that the Rural Bank sector in Central Java is highly dependent on savings in the form of ordinary savings and deposit savings. Moreover, based on the facts also, it shows the ratio between total debts to total equity of 551.56%. The minimum, maximum and standard deviations from the total debt ratios are indicative of a widespread and very uneven sector related to the level of leverage.

While the ability level of total assets and total equity in providing profit (ROA and ROE) is an average of 2.53% and 13.74%.

4.2. Regression Analysis

The empirical test consists of 8 multi-regression equation models, as summarized in Table 3 and Table 4. The present study uses ROA and ROE as the dependent variable. For independent variables, the study enters TD_TA, SA_TA, LO_TA, OD_TA, munificence, dynamism and complexity. To analyze the effects of moderation, the authors have created a simple regression model by incorporating different values for moderation, munificence, dynamism and complexity variables into several interactive models.

Table 3 shows the results of regression analysis for the effect of capital structure (ratio of debt to total assets) on firm performance. Model 1 is used to analyze the effects of TD_TA, munificence, dynamism, complexity, and interactions on ROA. Model 2 is used to analyze the effects of SA_TA, LO_TA, OD_TA, munificence, dynamism, complexity, and interactions on ROA. Model 3 is used to analyze the effects of TD_TA, munificence, dynamism, complexity, and interactions on ROE. Model 4 is used to analyze the effects of SA_TA, LO_TA, OD_TA, munificence, dynamism, complexity, and interactions on ROE. While Table 4 shows the results of regression analysis for the effect of capital structure (ratio of debt to total equity) on firm performance. Model 5 is used to analyze the effects of TD_TE, munificence, dynamism, complexity, and interactions on ROA. Model 6 is used to analyze the effects of SA_TE, LO_TE, OD_TE, munificence, dynamism, complexity, and interactions on ROA. Model 7 is used to analyze the effects of TD_TE, munificence, dynamism, complexity, and interactions on ROE. Model 8 is used to analyze the effects of SA_TE, LO_TE, OD_TE, munificence, dynamism, complexity, and interactions on ROE.

4.2.1. Main Effect of Capital Structure on Performance

The main effect of the ratio of total debt to total assets (TD_TA) on ROA and ROE is shown in models 1 and 3. From these results, it shows that TD_TA has a significant negative effect on both ROA ($\beta = -0,494$; sig. < 0.01) and ROE ($\beta = -2,633$; sig. < 0.01). In other words, an increase in TD_TA will be followed by a decrease in performance. While the main effect of the ratio of total debt to total equity (TD_TE) on ROA ($\beta = -0,494$; sig. < 0.01) and ROE ($\beta = -2,633$; sig. < 0.01) is shown in models 5 and 7. In other words, an increase in TD_TE is associated with a decline in rural banks' performance. As such, it is claimed that capital structure decisions have a significant inverse effect on the performance of rural banks in Central Java. In the banking context, these results are consistent with the results of previous research studies (El-Masry, 2016; Siddik *et al.*, 2017). In the context of microfinance, these results contradict to the results of previous studies, which have shown that debt capital has a positive effect on profitability (Waweru, 2016). The main effects of saving to total assets ratio (SA_TA), loans to total assets (LO_TA) and other debt to total assets (OD_TA) on ROA and ROE are shown in models 2 and 4. From these results, it shows that SA_TA has a significant negative effects on both ROA ($\beta = -16,646$; sig. < 0.01) and ROE ($\beta = -50,543$; sig. < 0.01). LO_TA also has a significant negative effect on both ROA ($\beta = -16,125$; sig. < 0.01) and ROE ($\beta = -48,064$; sig. < 0.05), whereas, OD_TA does not have a significant effect on both ROA and ROE. In other words, an increase in TD_TA and LO_TA is associated with a decrease in the performance of rural banks. While models 6 and 8 show the main effects of savings to total equity ratio (SA_TE), loans to total equity (LO_TE) and other debt to total equity (OD_TE) on ROA and ROE. SA_TE has a significant negative effect on both ROA ($\beta = -12,583$; sig. < 0.01) and ROE ($\beta = -45,830$; sig. < 0.01). LO_TE also has a significant negative effect on both ROA ($\beta = -1,815$; sig. < 0.01) and ROE ($\beta = -7,030$; sig. < 0.01). OD_TE does not have a significant effect on both ROA and ROE. In other words, an increase in SD_TE and LO_TE is associated with a decrease in the performance of rural banks. As such, it is claimed that the decision to increase savings and loans has a significant inverse effect on the performance of rural banks in Central Java. These results support previous research findings, which show that

capital structure (in the form of loans and savings) influences profitability (El-Masry, 2016; Siddik *et al.*, 2017). In contrast, other debt ratios to total assets (OD_TA) do not have a significant effect on both ROA and ROE. This finding is in line with the results of research from Kusmayadi (2018), which show that CAR does not significantly affect ROA and ROE in rural banks.

Table-3. The result regression of total debt to assets on ROA and ROE.

| Independent variables | Dependent variable | | | |
|-------------------------|--------------------|------------|-----------|------------|
| | ROA | | ROE | |
| | Model 1 | Model 2 | Model 3 | Model 4 |
| Constant | 13,542*** | 15,764*** | 44,537*** | 51,686*** |
| TD_TA | -13,690*** | | -40,672** | |
| SA_TA | | -16,646*** | | -50,543*** |
| LO_TA | | -16,125*** | | -48,064** |
| OD_TA | | 0,171 | | 5,048 |
| MUNIFICENSE | 0,015 | -0,179 | -3,278 | -4,077 |
| DYNAMISM | -0,151** | -5,510*** | -6,886 | -1,391 |
| COMPLEXITY | -0,810 | -10,172 | -112,570 | -151,860 |
| TD_TA*MUN | 0,115 | | 4,913* | |
| TD_TA*DYN | 0,162* | | 0,765 | |
| TD_TA*COM | 2,356 | | 148,636 | |
| SA_TA*MUN | | 0,390 | | 6,100* |
| LO_TA*MUN | | 0,307 | | 5,461* |
| OD_TA* MUN | | -0,743 | | 3,165 |
| SA_TA*DYN | | 0,556*** | | 1,374 |
| LO_TA*DYN | | 0,613*** | | 2,270** |
| OD_TA*DYN | | 0,851*** | | 2,337 |
| SA_TA*COM | | 12,623 | | 187,138 |
| LO_TA*COM | | 10,155 | | 173,227 |
| OD_TA*COM | | 80,923 | | 875,905* |
| R ² | 0,262 | 0,315 | 0,089 | 0,078 |
| Adjusted R ² | 0,240 | 0,270 | 0,061 | 0,051 |
| F | 11,826 | 6,907 | 3,239 | 2,832 |

Note: *** significant at the 0.01 level.

** significant at the 0.05 level.

* significant at the 0.10 level.

4.2.2. Moderating Effect of Environmental Munificence, Dynamism and Complexity

Model 1 shows that the interaction between total debt and environmental munificence (TD_TA*MUN) has no effect on ROA. These results indicate that the effect of capital structure on firm performance (using ROA) does not depend on environmental munificence and complexity. Conversely, the interaction between total debt and environmental dynamism (TD_TA*DYN) has a significant positive effect on ROA ($\beta = 0,162$; sig. < 0.10). Besides that, dynamism is not only a moderator but also a predictor ($\beta = -0,151$; sig. < 0.05). This finding supports the results of previous studies that environmental dynamism moderates the relationship between strategy and company performance (Priem *et al.*, 1995; Gilley *et al.*, 2004). These results are not in accordance with the research of Wang *et al.* (2019), which finds that environmental dynamism can be negatively moderate this relationship. Thus, environmental dynamism can affect the performance of rural bank directly and can also moderate the relationship between capital structure and the performance of rural bank. These results indicate that the effect of capital structure on firm performance (using ROA) does not depend on both environmental complexity and munificence, but much depends on environmental dynamism. The more dynamic environment will reduce the negative relationship between capital structure and ROA. Therefore, in a stable condition, the addition of debt will improve company performance.

Table-4. The result regression of total debt to equity on ROA and ROE.

| Independent variables | Dependent variable | | | |
|-------------------------|--------------------|------------|-----------|------------|
| | ROA | | ROE | |
| | Model 5 | Model 6 | Model 7 | Model 8 |
| Constant | 5,109*** | 12,675*** | 25,612*** | 49,605*** |
| TD_TE | -0,494*** | | -2,633*** | |
| SA_TE | | -12,583*** | | -45,830*** |
| LO_TE | | -1,815*** | | -7,030*** |
| OD_TE | | -1,287 | | -10,159 |
| Munificense | 0,149** | 0,245 | -0,588 | -3,204* |
| Dynamism | -0,052*** | ,095*** | -,269*** | -0,933 |
| Complexity | -2,833 | 9,917 | -34,097* | -104,000 |
| TD_TE*MUNE | -0,010 | | 0,242** | |
| TD_TE*DYN | 0,006** | | 0,039** | |
| TD_TE*COM | 0,582 | | 7,820*** | |
| SA_TE*MUNE | | 0,341 | | 4,725* |
| LO_TE*MUN | | 0,031 | | 0,658** |
| OD_TE* MUN | | -0,093 | | 2,054 |
| SA_TE*DYN | | 0,119** | | 0,759 |
| LO_TE*DYN | | ,048*** | | ,231*** |
| OD_TE*DYN | | ,158*** | | 0,513 |
| SA_TE*COM | | 9,447 | | 129,461 |
| LO_TE*COM | | 1,532 | | 17,106 |
| OD_TE*COM | | 10,425 | | 112,221** |
| R ² | 0,329 | 0,327 | 0,199 | 0,157 |
| Adjusted R ² | 0,309 | 0,282 | 0,174 | 0,101 |
| F | 16,309 | 7,294 | 8,245 | 2,791 |

Note: *** significant at the 0.01 level.

** significant at the 0.05 level.

* significant at the 0.10 level.

In model 2, it explains the effect of moderation of the organizational environment on the relationship between each type of debt and ROA. Not all of the three dimensions of the organizational environment have a moderating effect, but only the environmental dynamism has a significant effect on the relationship between savings, loans, other debt and ROA. Environmental munificence and complexity do not have a moderating effect on the relationship. The interaction effect can explain the moderating effect of environmental dynamism between SA_TA and dynamism (SA_TA * DYN); LO_TA and dynamism (LO_TA * DYN); and OD_TA and dynamism (OD_TA * DYN) on ROA. The environmental dynamism has a significant positive moderation effect on the relationship between SA_TA and ROA ($\beta = 0,556$; sig. < 0.01); LO_TA and ROA ($\beta = 0,613$; sig. < 0.01); OD_TA and ROA ($\beta = 0,851$; sig. < 0.01). These results are in relation with the previous finding that the relationship between the rationality of decision processes and company performance is moderated by environmental dynamism (Priem *et al.*, 1995). Thus, the effect of SA_TA and LO_TA and OD_TA on ROA depends on environmental dynamism. If environmental conditions are more stable then the relationship between each type of debt and ROA will be more positive. Therefore, in a stable environment, an increase in savings and loans will improve the company's performance.

Model 3 shows the results of interaction effects between TD_TA and environmental munificence (TD_TA*MUN), environmental dynamism (TD_TA*DYN) and environmental complexity (TD_TA*COM) on the performance of rural banks (using ROE). The analysis shows that only the environmental munificence significantly moderates the relationship between total debt and ROE ($\beta = 4,913$; sig. < 0.10). Environmental dynamism and complexity are not significant. These results support previous findings that environmental munificence can support the relationship between organizational strategy and company performance (Koberg, 1987; McArthur and Nystrom, 1991). This result is not in line with the stud of Wang *et al.* (2019), it reveals that environmental munificence can negatively moderate the relationship between inventory survival and venture survival. These findings indicate that the better the environmental munificence, the relationship between TD_TA and ROE will be

stronger. Instead, the relationship between TD_TA and ROE does not depend on environmental dynamism and complexity. Therefore, in a stable or stable condition, the addition of debt will improve ROE.

In model 4, it explains the moderating effect of the organizational environment on the relationship between the ratios of each type of debt to performance (using ROE). From the three dimensions of the organizational environment, it turns out to have different effects. Environmental munificence is able to positively moderate the relationship between SA_TA and LO_TA and ROE ($\beta = 4,725$; sig. < 0.10 and $\beta = 0,658$; sig. < 0.005). Besides that environmental complexity has a positive moderating effect on the relationship between OD_TA and ROE ($\beta = 875,975$; sig. < 0.10), while dynamism has no moderation effect. These results support previous findings that environmental munificence can support the relationship between organizational strategy and the performance of company (Aldrich, 1979; McArthur and Nystrom, 1991). This result is not related to the study of Wang *et al.* (2019), which reveals that environmental munificence can negatively moderate the relationship between inventory survival and venture survival. Therefore, if the environmental conditions are stable, an increase in savings and loans increases ROE more than in non-established conditions. Environmental dynamism is only able to moderate the relationship between LO_TA and ROE. Consequently, if environmental conditions are more dynamic, and then an increase in loans will increase ROE, whereas, environmental complexity is only able to moderate the relationship between OD_TA and ROE. As a result, if environmental conditions are more complex, then an increase in other debt will increase ROE more than in less complex conditions.

Table 4 shows the regression analysis of capital structure (ratio of debt to total equity) on firm performance. Model 5 and 6 show the moderating effect of the organizational environment on ROA, whereas the 7 and 8 models are used to analyze the moderating effects of the organizational environment on ROE.

Model 5 shows the results interaction effect between TD_TE and environmental munificence (TD_TE*MUN), environmental dynamism (TD_TE*DYN) and environmental complexity (TD_TE*COM) on the performance of rural banks (using ROA). The analysis shows that environmental dynamism significantly moderates the relationship between total debt and ROA ($\beta = 0,006$; sig. < 0.05). These results are consistent with the results of previous studies that show that the environmental dynamism can affect the relationship between capital structure and company performance (Priem *et al.*, 1995; Gilley *et al.*, 2004). This result is not related to the research of Wang *et al.* (2019) that finds that environmental dynamics can negatively moderate this relationship. In contrast, both environmental dynamism and complexity are insignificant. These results indicate that the more dynamic environment, the relationship between TD_TE and ROE will be more positive. Therefore, under conditions of low dynamics, increasing debt will increase ROA. Instead, the relationship between TD_TE and ROA does not depend on environmental munificence and complexity.

In model 6, it explains the moderating effect of the organizational environment on the relationship between each type of debt and performance (using ROA). Of the three environmental dimensions, only environmental dynamism has a significant positive effect on the relationship between SA_TE, LO_TE, OD_TE and the performance of rural banks (using ROA). Environmental dynamism is able to moderate significant positive on the relationship: between SA_TE and ROA ($\beta = 0,119$; sig. < 0.05); between LO_TE and ROA ($\beta = 0,048$; sig. < 0.01); and between OD_TE and ROA ($\beta = 0,158$; sig. < 0.01). These results support previous research, which proves that the environmental dynamism moderates the relationship between capital structure and performance (Priem *et al.*, 1995; Gilley *et al.*, 2004). However, this result is not in accordance with the research of Wang *et al.* (2019). While both environmental complexity and munificence is insignificant. These results indicate that in an environmental dynamism level is low, the relationship between SA_TE, LO_TE and OD_TE and ROA will be more positive. While the relationship between capital structure (SA_TE, LO_TE and OD_TE) and ROA does not depend on environmental munificence and complexity. Therefore, in conditions of low environmental dynamics, changes in the ratio of each type of debt to equity will improve ROA.

Model 7 shows the results of the moderating effects of environmental munificence, dynamism and complexity on the relationship between TD_TE and the performance of rural bank (using ROE). The results of the interactions of the three environmental dimensions show significant positive effects. This result is shown in the regression results from the interaction between total debt and environmental conditions (TD_TE*MUN, TD_TE*DYN and TD_TE*COM). The moderating effects of environmental munificence, dynamism and complexity on the relationship between TD_TE and ROE are TD_TE*MUN ($\beta = 0,242$; sig. < 0.05); TD_TE*DYN ($\beta = 0,039$; sig. < 0.05); TD_TE*COM ($\beta = 7,820$; sig. < 0.01). Thus, the relationship between TD_TE and ROE is highly dependent on the conditions of the three environments. These results provide supporting evidence for the proposition that the environment moderates the relationship between capital structure and performance (Li and Simerly, 2002). This result is not in line with the research of Wang *et al.* (2019), which finds that environmental dynamics and complexity can negatively moderate this relationship. Therefore, the relationship between TD_TE and ROE will be positive if the environmental munificence is high, the environment dynamism is low and the environmental complexity is also low.

In model 8, it explains the moderating effect of the organizational environment on the relationship between each type of debt and performance (using ROE). The three dimensions of the organization's environment turn out to have different effects. Environmental munificence has a positive moderation effect on the relationship between SA_TE and ROE ($\beta = 4,725$; sig. < 0.10); LO_TE and ROE ($\beta = 0,658$; sig. < 0.05). These results are consistent with the results of previous studies (Wang *et al.*, 2019), finding that environmental munificence can positively moderate this relationship. Therefore, if the environmental conditions are established, an increase in savings and loans increases ROE more than in an unstable condition. Environmental dynamism provides a positive moderation effect on the relationship between LO_TE and ROE. Therefore the relationship between LO_TE and ROE will be stronger if the environmental dynamics are low, whereas environmental complexity is only able to moderate the relationship between OD_TE and ROE ($\beta = 4,725$; sig. < 0.05). Therefore, the relationship between OD_TE and ROE will be stronger if the environmental complexity is low.

5. CONCLUSION

The capital structure, as measured by the ratio of total debt to total assets and total equity both have a significant negative effect on ROA and ROE. Thus, an increase in debt for rural banks has an adverse effect on performance. Conversely, a decrease in debt can have a positive impact on the performance rural banks. Furthermore, the effect of each type of debt on the performance of rural banks shows similar results to total debt. The effects of savings and loans have a negative impact on ROA and ROE. Debt in other forms has no significant effect. Thus, the increase in savings and loans can reduce the performance of rural banks.

The effect of organizational environment moderation on the relationship between capital structure and the performance of rural banks shows different results. (1) Environmental munificence has a positive moderation effect on the relationship between capital structure (total debt, saving and loan) and ROE. Therefore, in an established or supportive organizational environment, the negative relationship between capital structure and ROE will decrease. (2) Environmental dynamism has a positive moderation effect on the relationship between capital structure (total debt, saving and loan) and ROA. As a result, the negative relationship between capital structure and ROA will decrease if environmental conditions become more uncertain. (3) Environmental complexity has a positive moderation effect, especially on the relationship between other debt and ROE. Therefore, if the environmental complexity is high, then the negative relationship between other debt and ROE will be smaller. These three effects of moderation mean that an increase in debt will be better done if the environmental conditions of the organization are in a supportive, unpredictable and high complexity. The present research further suggests that the performance of rural banks can be investigated with corporate governance because it has never been done. The relationship between the two is also very dependent on the changing organizational environment. Furthermore, this object can

be expanded with a sample of Islamic financial institutions because these institutions have different specifications from commercial banks.

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