DETERMINANTS OF CAPITAL STRUCTURE: A CASE STUDY OF COMMUNITY DEVELOPMENT BANKS IN INDONESIA

by Hamdi Agustin

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Abstract

The objectives of this research is determinants of capital structure in region development bank (Bank Pembangunan Daerah) context are examined with reference to capital structure theories. The population consists of 26 community development banks. The period under study is from 2005 to 2010. The data are taken from banks' annual reports. In this study using panel data. and analysis using pooled ordinary least square (OLS), random effect and Fixed Effect. The result is a negative relationship between the capital structure with PROFIT. This study also shows that there is significant influence between profitability with leverage. there is negative relationship between capital structure with LOANS. This research also shows that there is significant influence between profitability with leverage. There is a positive relationship between the capital structure. ASSETS also concluded that the size of the bank significantly affect leverage.

Key Words *: capital structure, region development bank and leverage*

A. INTRODUCTION

One of the unique banking in Indonesia is that there are regional development banks (BPD), which is a government-owned bank districts. BPD categorized as focused bank, ie the bank with regional focus. At present, the BPD has a core capital of 100 billion rupiah to 10 trillion rupiah except BPD Bengkulu. Even all BPD was able to have a minimum capital adequacy ratio above 10%, so it belongs to the bank performs well. BPD thus able to create a healthy banking structure in the country and able to meet the needs of the community and to promote the ongoing economic development of Indonesia.

One of the hallmarks of BPD is that it has a very dominant market and benefit the local county government. One of the reasons BPD there is to be a district collector general cash

1

account. Even local government can make regulations that put BPD as the only bank that can handle the affairs of the banking community. With the market, then the excellent products BPD is working capital products and services to the business. In addition, the BPD also deal with the other markets in the same district as dealing with the cooperation of local government, particularly in terms of suppliers and contractors. In terms of the consumer market, customers BPD personnel from the county government and other institutions in the region.

Currently, BPD must be more understanding in their respective area, however there are many problems that many businesses BPD in the district do not understand and do not have a management company to get a loan guarantee; Support human resources that have not been reliable to do the marketing, calculation and Colektibiliti loans and not all districts are board guarantor loan guaranty agencies other districts.

One of the advantages BPD is a market that is very dominant and profitable local government. One of the reasons there are to be BPD bank cash account to the district collector. Even local government can make rules that put BPD as the only bank that can handle the affairs of the banking community. With the market, then the excellent products BPD is working capital products and services to the business. In addition, the BPD also deal with the other markets in the same district as dealing with the cooperation of local government, particularly in terms of suppliers and contractors. In terms of the consumer market, BPD clients consist of local government staff and other institutions in the region.

The objectives of this research is determinants of capital structure in region development bank (Bank Pembangunan Daerah) context are examined with reference to capital structure theories. So, this research is to test the effect of different explanatory variables of profitability, capital structure internal and external factors.

B. LETERATURE REVIEW

There are different theories of capital structure. David Durand propounded the net income approach of capital structure in 1952 (Durand 1952). This approach states that firm can increase its value or lower the cost of capital by using the debt capital. Net operating income approach is converse to this approach. This approach contends that the value of a firm and cost of the capital are independent to capital structure. Thus, the firm can not increase its value by judicial mixture of debt and equity capital. These are two extreme approaches to capital structure.

Solomon developed the intermediate approach to the capital structure in 1963. This traditional theory of capital structure pleads that value of the firm goes increase to a certain level of debt capital and after then it tends to remain constant with a moderate use of debtcapital, and finally value of the firm decreases. Thus, this theory holds the concept of optimal capital structure.

3

The modern theory of capital structure began with the celebrated paper of Modigliani and Miller published in 1958 (Harris and Raviv 1991). In this paper, they supported the net operating income approach and rejected the traditional theory of capital structure. They contend in their first proposition that the market value of any firm is independent to its capital structure and is given by capitalizing its expected return at the rate appropriate to the risk class (Modigliani and Miller 1958). This was theoretically very sound but was based on the assumptions of perfect capital market and no tax world, which were not valid in reality. So, this was corrected in 1963. In correction, they incorporated the effect of tax on value and cost of the capital of the firm (Modigliani and Miller 1963); and contend that, in the presence of corporate tax, the value of the firm varies with the variation of the use of the debt due to tax benefit on interest bill (Baral 2004).

In the study of Modigliani and Miller (1958), a proposition I state that all the shares of the company have the same pattern and price. Investors be careful when the company's share price similar but different. They need to dig deeply in the company's financial and non-financial information before making a decision fusion. Proposition II states that the return on equity increased linear with debt (Modigliani & Miller, 1958). This introduces the concept of capital structure. Management option to use debt or equity capital in financing activities of the company. Proposition III states that the marginal cost of capital of a company is equal to the average cost of capital (Modigliani & Miller, 1958).

Modigliani and Miller propositions context is similar to Fama (1978) assumption of perfect capital markets. In the study of tax correction, but Modigliani and Miller found

that the tax has a direct effect on the cost of capital. That is, profits from tax debt is greater than what is recommended in the articles I proportions in 1958. Miller (1977) find that the gains depend tax marginal tax debt level. Investors should be aware when a company can benefit from the tax debt. Jensen and Meckling (1976) found that when the optimal capital structure to minimize agency costs. This will increase shareholder wealth. Modigliani (1982) found that the average financial influenced by the average tax rate and risk.

Based on MM theory was first developed three theories, namely, the trade-off theory (Bradley et al., 1984). Second pecking order theory (Myers & Majluf, 1984) and third, agency theory (Jensen & Meckling, 1976). Trade-off theory states that the optimal debt ratio is a balance between profit and cost of debt. Optimal capital structure is achieved when the marginal present value (MPV) of the sum equal to the amount of tax havens MPV of bankruptcy costs on debt changes (Bradley et al., 1984). Pecking order theory emphasizes the information asymmetry between company insider and outsider smelters (Myers & Majluf, 1984). Many companies will focus primarily cash-flow method for optimal profit when the fund expenses less than the demand of investors, the further use of securities (securities).

Myers (1977), Jensen (1986) develop a model which can reduce problem debt investment advantages, however the lack of investment is a problem. This model states that the debt can be a positive and negative effect on the performance of both companies can have positive and negative influences, this time the company is still going on. According to

model generally Myers (1977), Jensen (1986) and focus on the relationship and influence whether investors capitalize on the company's debt. The reason this can happen with little chance of growth in which the debt is positive on the company's performance. However, debt can have a little chance to grow in the company (McConnell and Servaes, 1995). In the banking industry bank performance can influence the choice of capital structure (Berger & Bonaccorsi, 2006). This reversal of the causal influence in the cost of agency theory (Jensen & Meckling, 1976; Myers, 1977; Harris & Raviv, 1991). Isue control of the company (Harris and Raviv, 1988), asymmetric information (Myers & Majluf, 1984; Myers, 1984) and tax (DeAngelo & Masulis, 1980; Bradley et al., 1984) to the value of the company.

In the banking industry, Miller and Merton (1995) states that the connection with nature issued by a bank giro in perfect capital markets, there is no reason to say that the demand deposits differ from other companies' securities. Giro marked with high liquidity, low risk and easier to transfer a deposit request funding sources with relatively low cost. Therefore, non-bank companies will have an incentive to their venture capital by issuing securities. In perfect capital markets, the bank will not do it. However, in such circumstances, would MM simple theory applies to banks. Bank policy should be viewed as friction which might cause MM theory irrelevant and may be a driving force in determining the structure of the banking capital (Octavia, 2008).

Factors of Capital Structure

There are many factors that might impact on the determination of a bank's capital structure, but in this study the factors used are profitability, growth, asset tangibility, size

tax, non-debt tax shield tehadap bank capital structure in which the proxy is used for capital structure leverage ratio.

Profitability

The probability that one can determine the structure of bank capital, banks with high profitability usually less use of debt in its capital structure because banks tend to use internal funds over external funds. According to the pecking order theory of the relationship between profitability with negative leverage due to the growing profitability of a company, the company will be greater use of internal funds and smaller funds using external (Mayer, 1984). Yet the trade-off theory assumes that companies with high profitability usually more use of debt in its capital structure to enhance the benefits of the tax is consistent with shield. Ooi (1999) which indicates profitability have a positive relationship with leverage. mainwhile of the many studies that have been conducted among others by Ahmad (2011), Amidu (2007) groop and Heider (2009) concluded that there is a relationship between profitability negative with leverage.

 Size (Size Bank)

Large companies tend to be diversified, reducing the risk bankrup. aside, it can provide more information so that it can lower the cost monitoring. This indicates a positive relationship between size with leverage. In the other hand, the large size reduces the information asymmetry between insider with outside investors . asymmetry which is

encouraging smaller companies to use stock that could assumtion negative the relationship between the size of the leverage. Pecking order theory assumes that there is a negative relationship between the size of the company with leverage, while the trade-off theory assumes that there is a positive correlation between the size of the company with leverage.

LOANS

Credit risk or default risk is called a risk due to the failure or inability of customers return the amount of loans received from banks and interest in accordance with the specified time period (Siamat, 1999). Thus, the hypothesis can be established is that the credit risk of a significant negative effect on the bank's capital structure.

C. DATA AND METHODS

The collection of data is a crucial part of doing a research. Data will be very important in the processing and analysis, therefore the data collection techniques should be done to ensure that the data obtained is correct, accurate and can be accounted so the processing and analysis of data bias. All not used in this study is a secondary data obtained from several sumber. Tecnical collection done in several steps, ie an empirical study to the library. Empirical studies conducted by collecting lists banks in Indonesia through the website Bersa effect www.idx.co.id and economic data and financial and a secondary data obtained from Bank Indonesia website www.bi.go.id . data used include income statement and balansheet. Data that have been collected and then do analysis data. The

collect data with the research literature that the data collected through journals, books, and other scientific resources for the purpose of assessment that are based on theoretical concepts relevant to this study.

The population consists of 26 community development banks. The period under study is from 2005 to 2010. The data are taken from banks' annual reports. In this study using panel data. and analysis using pooled ordinary least square (OLS) and random effect. To test capital structure of community development banks, the following model is estimated:

$$LEV_{it} = \beta_0 + \beta_1*PPROFIT_{it} + \beta_2*LOANS_{it} + \beta_3*ASSETS_{it} + e_{it}$$

where
LEV_{it} : Leverage to total assets of bank i in period t,
$PROFIT_{it}$:   return on assets
$LOANS_{it}$: Total loans to total assets
$ASSETS_{it}$: Logaritm total assets
e_{it} : error term of bank i in period t.

No	Varibel	Measurement
1	Leverage	$Leverage = \dfrac{Total\ Debt}{Total\ Assets}$
2	Profitability	$Profitability = \dfrac{Profit\ Befor\ Tax}{Total\ Assets}$
3	Assets Size	Size = Logarithm of Total Assets
4	Total Loans	$Loans = \dfrac{Total\ loans}{Total\ assets}$

D. RESULT AND ANALYSIS

Table 1
Result Data Analysis and Classical assumption

```
. correlate roa pinjta logaset thta
```

9

```
(obs=156)

             |      roa   pinjta  logaset     thta
-------------+------------------------------------
         roa |   1.0000
       loans |   0.2378   1.0000
     logaset |  -0.2474  -0.0345   1.0000
         LEV |  -0.5472  -0.2829   0.3157   1.0000


. vif

    Variable |      VIF      1/VIF
-------------+----------------------
         roa |     1.13    0.886129
     logaset |     1.07    0.938141
       loans |     1.06    0.942802
-------------+----------------------
    Mean VIF |     1.09
```

Classical assumption of data processing results in Table 1 shows the data assuming multikolinear spared because his deep correlation between the variable values lower than 0.8 (Baltagi, 2005). Besides VIF value not exceeding 10.

Table 2

Result Data Analysis regression dan Correlation

```
tsset no tahun, yearly
      panel variable:  no, 1 to 26
       time variable:  tahun, 2005 to 2010

. regress thta roa logaset pinjta

      Source |       SS       df       MS              Number of obs =     156
-------------+------------------------------           F(  3,   152) =   28.54
       Model |  .078493657    3  .026164552            Prob > F      =  0.0000
    Residual |  .139335013  152  .000916678            R-squared     =  0.3603
-------------+------------------------------           Adj R-squared =  0.3477
       Total |  .217828671  155  .001405346            Root MSE      =  .03028

------------------------------------------------------------------------------
         LEV |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         roa |  -1.383828   .2078215    -6.66   0.000    -1.79442   -.9732361
     logaset |   .0077038   .0026275     2.93   0.004    .0025127    .0128948
       loans |  -.0309598   .0123836    -2.50   0.013   -.0554259   -.0064936
       _cons |   .8425853   .0422975    19.92   0.000    .7590184    .9261522
------------------------------------------------------------------------------

. regress thta roa logaset pinjta, robust

Regression with robust standard errors              Number of obs =     156
                                                    F(  3,   152) =   21.70
```

10

```
                                              Prob > F        =   0.0000
                                              R-squared       =   0.3603
                                              Root MSE        =   .03028

-------------------------------------------------------------------------------
              |               Robust
          LEV |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+----------------------------------------------------------------
          roa |  -1.383828   .2584533    -5.35   0.000    -1.894452   -.8732032
       logaset |   .0077038   .0025286     3.05   0.003      .002708    .0126995
         loans |  -.0309598   .0176792    -1.75   0.082    -.0658884    .0039689
         _cons |   .8425853    .041694    20.21   0.000     .7602108    .9249598
-------------------------------------------------------------------------------

. xtreg thta roa pinjta logaset, re

Random-effects GLS regression                 Number of obs     =       156
Group variable (i): no                        Number of groups  =        26

R-sq:  within  = 0.1886                        Obs per group: min =         6
       between = 0.6327                                       avg =       6.0
       overall = 0.3589                                       max =         6

Random effects u_i ~ Gaussian                 Wald chi2(3)      =     71.49
corr(u_i, X)        = 0 (assumed)             Prob > chi2       =    0.0000

-------------------------------------------------------------------------------
          LEV |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
--------------+----------------------------------------------------------------
          roa |  -1.343839   .2191406    -6.13   0.000    -1.773347   -.9143315
         loan |  -.0282729   .0125974    -2.24   0.025    -.0529634   -.0035825
       logaset |   .0090807   .0029789     3.05   0.002     .0032421    .0149193
         _cons |   .8189466   .0474768    17.25   0.000     .7258938    .9119994
--------------+----------------------------------------------------------------
      sigma_u |   .0079576
      sigma_e |   .02807684
          rho |   .07435527   (fraction of variance due to u_i)
-------------------------------------------------------------------------------

. xtreg thta roa pinjta logaset, fe

Fixed-effects (within) regression             Number of obs     =       156
Group variable (i): no                        Number of groups  =        26

R-sq:  within  = 0.2542                        Obs per group: min =         6
       between = 0.4076                                       avg =       6.0
       overall = 0.2631                                       max =         6

                                              F(3,127)          =     14.43
corr(u_i, Xb)  = -0.7336                       Prob > F          =    0.0000

-------------------------------------------------------------------------------
          LEV |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
--------------+----------------------------------------------------------------
          roa |  -1.401647   .2837736    -4.94   0.000    -1.963183     -.84011
        Loans |  -.0223713   .0138415    -1.62   0.109    -.0497611    .0050185
       logaset |   .0330842   .0073626     4.49   0.000      .018515    .0476534
         _cons |   .4503127   .1113906     4.04   0.000     .2298908    .6707347
--------------+----------------------------------------------------------------
      sigma_u |   .02953006
      sigma_e |   .02807684
          rho |   .5252105    (fraction of variance due to u_i)
-------------------------------------------------------------------------------
```

```
F test that all u_i=0:     F(25, 127) =     1.99          Prob > F = 0.0071
. correlate
```

The results of the data processing for regression and correlation analysis contained in Table 2 indicate that the variable PROFIT, and ASSETS LOANS affect capital structure. This can be explained as follows:

1. LOANS Effect Of Capital Structure

The results showed loans have a negative effect on capital structure. The results are consistent with the results of the study Darwanto (2008). While Gropp and Heider (2009) found that the risk of asset and market risk will negatively affect the capital structure. The level of credit risk has a significant influence on the ability of banks to provide funds. Credit risk is high as seen from the level of non-performing loans from a bank, it can reduce the level of public confidence, which led to banks having difficulty in raising funds from third parties, thus reducing the sources of debt financing. The indirect effect of credit risk on capital structure.

2. PROFIT Relationship Analysis on capital structure

profitability has a significant effect on bank leverage and has relationships to leverage bank. This indicates that firms with high profitability tend to use a lower level of debt to

finance activities profitabiity.Bank with high accumulation would prefer to use the funds internal comparison eksternal. funds is consistent with the peck order theory and some previous research showing that there is a negative relationship exists between bank profitability to leverage. The Theory explained that the company will first use internal funds over external funds to finance all activities funded. therefore be concluded that profitability can explain the determination of the company's capital structure.

3. ASSETS Relationship Analysis on capital structure

Size describes the size of the size of a bank. Size or measure of a bank can be seen from the total assets or assets of which is owned by a large number it. bank owned assets, the greater the size of the bank. Result testing shows that size has influence significant impact on bank leverage and have a positive relationship. These results are consistent with the trade-off theory in which the size of the large banks tend to use more debt in comparison with small companies. Bank with large size indicates that the bank has a large asset such as this tend to use bank debt in the bank capital structure more likely to have easier access to obtain bank loans because these are considered to have less risk of bankruptcy than small banks. The result of size is consistent with previous research studies conducted by Fawad Ahmad (2011) and Amidu (2007) where there is a positive relationship between size with leverage bank. Therefore this study suggests that bank size may explain the bank's capital structure.
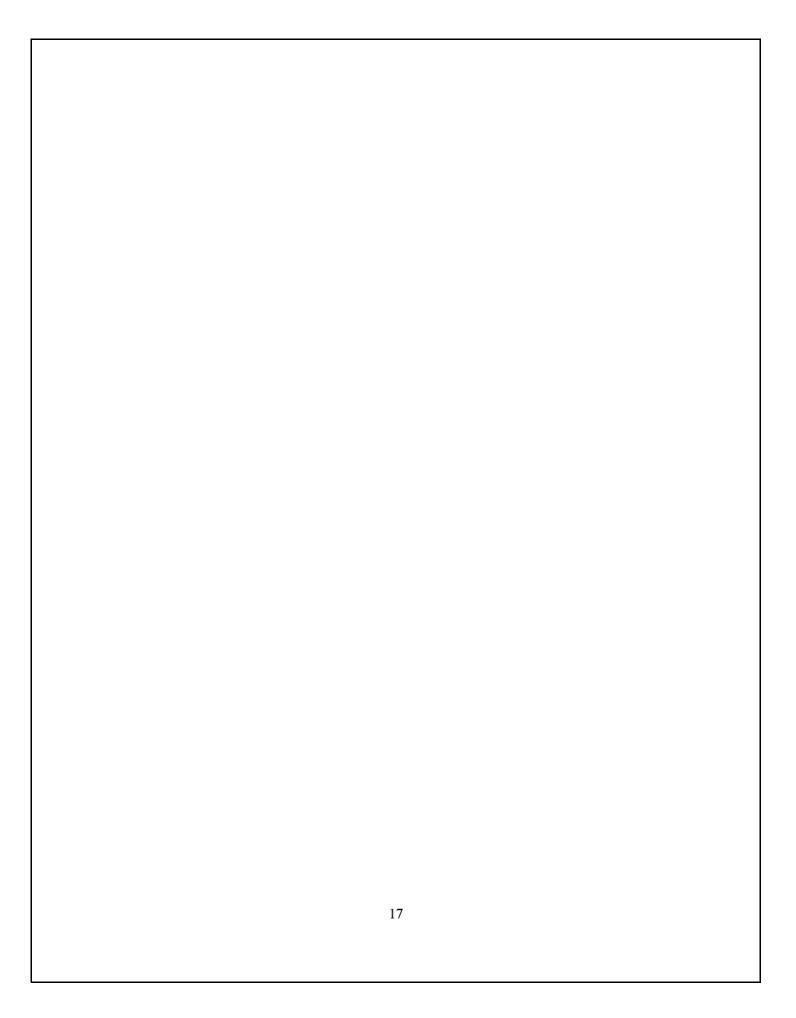
E.CONCLUSION

The research was done to examine the factors that affect the capital structure of banks listed on the Stock Exchange of research has been done Indonesia. In obtained results the following conclusions:

there is a negative relationship between the capital structure with PROFIT. This study also shows that there is significant influence between profitability with leverage. there is negative relationship between capital structure with LOANS. This research also shows that there is significant influence between profitability with leverage. there is a positive relationship between the capital structure. ASSETS also concluded that the size of the bank significantly affect leverage.

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