1. THE IMPACT OF BOARD SIZE, BOARD INDEPENDENCYAND INVESTMENT OPPORTUNITY ON DEBT POLICY OF MANUFACTURING FIRMS LISTED ON INDONESIA STOCK EXCHANGE

by Zainal Abidin Sahabuddin, Bram Hadianto

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Abstract

The implementation of good corporate governance is essential for firms listed on capital market. By doing it, firms will be trusted by investors and creditors so that they obtain funds easily from both of them. This study focuses on how listed firms build their reputation before creditors via supervisory board. The effectiveness of supervisory board can be shownby its size and its independency.In this study, the test of investment opportunity impact on debt policy is done to prove that transfer of benefit from shareholders to debt holders does not exists. Therefore, the purpose of this study is to test an impact of board size, board independencyand investment opportunity on debt policy. The population of this study comes from manufacturing firms listed on Indonesia Stock Exchange. The firms as sample are taken from the population by using stratified random sampling method. Regression model with pooled data is used as method of data analysis. This study concludes that board size, board independency, and investment opportunity have a negative impact on debt policy. The negative impact of investment opportunity on debt policy shows that transfer of benefits does not occur in the relationship between two parties: shareholders and debtholders.

Keywords: board size, board independency, debt policy, investment opportunity

Introduction

Capital market is a place where a companycan obtain the money from investors by conducting public offering (IPO) (Hartono, 2012). In this primary market, thecompanyissues and sells stocks to investors at a price determined by a deal of companywith underwriters. After this session is over, the stocks are traded among investors in the secondary market and their price is fixed by mechanism of supply and demand(Sunariyah, 2013). For the company that has already listed on capital market, an implementation of good corporate governance (GCG) is necessary (Krishnan & Amin, 2017) because the company can build a reputation through it (Shleifer&Vishny, 1997). By doing it, according to Shleifer&Vishny (1997), fund providers,consisting of investors and creditors,will be ensured that they are able to get return of theirinvested funds in a firm.

Pecking order theory suggests debt become the second alternative for a firm. This action is done, naturally, if its retained earnings are not sufficient to finance of projects of the firms (Brealey, Myers,& Allen,2006). By using debt,the firm is required to pay principle and interest to its creditors. This condition will reduce an availability of free cash flow that managersspend for their own pleasure (Jensen,1986). If the firm forget to pay an interest to creditors, they can sue for control of the firm (Kim & Nofsinger, 2007).Differing from perspective of Jensen (1986), Easterbrook (1984) states that managers are a risk taker so that they afraid of using too much debt. If the firm that they manage with debt becomes more terrible, they willnot have their existing job anymore.

To ensure shareholders that the managers of a firm act in line with their interest, monitoring activity of managers is essential to be done.To realized it; therefore, shareholdersappoint asupervisory board (Berger, Ofek&Yermack, 2007). Based on the previous studies, the effectiveness of this activity will depend on the board size and its independency. Unfortunately, the results of previous studies are not still consistent to explain an impact of board size on debt policy. The study of Abdul-Qadir, Yaroson& Abdu (2013), Boroujeni, Noroozi, Nadem &Chadegan (2013) and Jaradat (2015) shows board size has a positive impact on debt policy. On the contrary, thestudy of Hasan& Butt(2009), Vakilifard, Gerayli, Yanesari, &Ma'atoofi(2011), Heng, Azrbaijani, & San (2012), Ranti (2013), andAbobakr&Elgiziry (2016)documents board size has a negative impact on debt policy.Differing from their studies showingthe positive and negative impact, study of Purag, Abdullah, &Bujang (2016), Kajananthan (2012), Hakim &Affes (2015), andSiromi&Chandrapala (2017) displays board size has no impact on debt policy.

The results of the previous study investigating an impact of board independency on debt policy of firms are also debatable. The study of Abor (2007), Heng, *et al.*(2012), Jaradat (2015), as well as Siromi&Chandrapala (2017) shows board independency has a positive impact on debt policy. Conversely, the study of Boroujeni, *et al.*(2013) and Purag,*et al.*(2016)points out board independency has a negative impact on debt policy. Differing from the studies showing the positive and negative impact, the study of Vakilifaard, *et al.* (2011), Kajananthan (2012), Abdul-Qadir, *et al.* (2013), Hakim &Affes (2015), Abobakr&Elgiziry (2016) displays board independency does not have the impact on debt policy.

Besides board size and its independency, debt policy of firm is also determined by investment opportunity. The results of previous study related to this impact on debt are not still consistent. For examples, Sudiyatno &Sari (2013) and Chen& Chen (2015)are the researchers whofindapositive impact of investment opportunity on debt policy. On the other hand, Vakilifard, *et al.* (2011) and Mahmodi&Khaneghah (2013),Hadianto (2015) finda negative impact of investment opportunity on debt policy. Differing from the studies confirming a significant positiveand negative impact of investment opportunity ondebt policy, the study of Akoto&Awunyo-Vitor (2014)showsinvestment opportunity does not have an impact on debt policy.

The inconsistency of previous study results shown above motivates this study to be conducted with manufacturing firms listed on Indonesia Stock Exchange in 2006-2015 as the research object. The manufacturing firms are used in this study because they tend to have similar accounting record.

Conceptual Framework & Hypothesis Development

Indonesia adopts atwo-tier board structureas used in Netherland in its internal structure of the organization. This system is characterized by existence of a commissioner board and director board (Syakhroza, 2002). The commissioner board especially acts as the representative of shareholders and generally functions as the representative of stakeholders (Utama&Afriani, 2005). The commissioner board does not have a right to manage firm directly,but it operates as a supervisor for the director board. The board of director has the responsibility for managingfirm activities (Sukamulja, 2004).

- The Impact of Board size on Debt Policy

The number of board members is one of essential things ina corporate governance mechanism (Florackis, 2008). The large board usually consists of the members from various backgrounds. The members mentioned here are the successful business leader and expert (Kim &Nofsinger, 2007).Large members of supervisory board in firmare able to use its authority to pressure manager to decrease an amount of debt (Berger, *et al.*,2007). According to Easterbrook (1984), decreasing the amount of debt is the firm action toavoidbankruptcy issue. In other word, the bigger number of supervisory board, the lower debt level will be. Theseexplanationsare alsosupported by study of Hasan& Butt (2009), Vakilifard, *et al.* (2011), Heng, *et al.* (2012), Ranti (2013), Abobakr&Elgiziry (2016).Based this information;therefore, the first hypothesis can be formulated as follows.

H_1: There is the negative impact of board size on debt policy.

- The Impact of Board IndependencyonDebt Policy

One of the corporate governance features is a presence of an independent board (Tjager, Alijoyo, Djemat, &Soembodo, 2003). The independent board has a right to assess, reward, and fire chief executive officer as top manager (Kim &Nofsinger,2007). By using its right, this board is able toactively monitor top managers easily; therefore, managers are able to decrease the debtto obtain an improvement offirm performance (Wen *et al.*,2002 in Abor 2007).In other word, the bigger portion of the independent board in the board structure, the lower debt level will be. These explanations are also supported by study of Hasan& Butt (2009), Heng, *et al.* (2012) andAbobakr&Elgiziry (2016) pointing out that board independency has a negative impact on debt policy. Based on this information;therefore, the second hypothesis can be formulated as follows.

H_2: There is the negative impact of board independence on debt policy.

- The Impact of Investment Opportunity inDebt Policy

One main source of conflict between creditor and stockholder in a firm is an underinvestment issue. This issue happens because the firmwith existing amount of debts does not execute the projects having a positive net present value (NPV). This action is caused by the unwillingness of the firm to transfer benefits coming from the realization of positive NPV project to creditors someday (Smith & Warner, 1979). To handle this problem, Lang, Ofek, &Stulz (1996) recommend that the firm having good prospect of investment should decrease the amount of debts to avoid transferring benefits to its creditors. These explanations are also supported by the study ofVakilifard, *et al.*(2011), Mahmodi&Khaneghah (2013)

andHadianto (2015)showing that investment opportunity has a negative impact on debt policy. Based on this information;therefore, the third hypothesis can be formulated as follows.

H_3: There is the negative impact of investment opportunity on debt policy.

Research Method

The type of this study is explanatory study. This study attempts to seek the causal relationship of an independent witha dependent variable (Zikmund, Babin, Carr, & Griffin, 2010). In this study, board size, board independence and investment opportunity act as the independent variable whereas debt policy acts as the dependent variable.

a. Board size is measured by the number of commissioner board of the firm at the end of the year.
b. Board independency is measured by proportion of independent members ofcommissioner board of the firm at the end of the year.
c. Investment opportunity is measured by ratio of price to book value of the firm at the end of the year.
d. Debt policy is measured by ratio of total debt to total assets of the firm at the end of the year.

The object of this study is firm. The population of this study is manufacturing firms listed on Indonesia Stock Exchange in 2006-2015. The firms in this period of time does not appear consistently because of several reasons: the firms are delisted in the middle of this period, the firms do initial public offering in this period. Because of these reasons, sampling frame is needed. According to Zikmund, *et al.*(2010), sampling frame consists of relevant members. Furthermore, the number of firms as sample to represent the relevant number of population members needed is determined by using formula of Issac & Michael (Sugiyono, 2012). Based on this formula, the number firms as sample representing the population of 111 firms is 84 firms (rounded). Furthermore, eighty-four firms as the total sample are allocatedbased on the available percentage number in column of proportion (see Table 1). Eighty-four firms, moreover, are taken by using stratified random sampling.

Table 1. The number of firms as samples for each stratum based on Stratified Random Sampling Method

Stratum	Number of Firms as Working Population	Proportion	Number of Firms as Sample
Basic Industry and Chemical	48	43,24%	36,3243≈ 36 (rounded)
Consumer Goods Industry	29	26,13%	21,9459≈ 22 (rounded)
Miscellaneous Industry	34	30,63%	25,7297≈ 26 (rounded)
Total	111	100%	84

Results and Discussions

In this study, a regression model with pooled data is used as method of data analysis. Nachrowi&Usman (2006)explain thatthis model combines cross-section and time-series data to estimate each regression coefficient by using an ordinary least square as method of estimation. As its consequence, it is essential to test several classical assumptions first such as normality test,multicollinearitydetection,heteroskedasticityand autocorrelation test.

Table 2 presents the result of normality test (see Panel A) and multicollinearity detection (see Panel B). To test normality of residuals, one sample Kolmogorov-Smirnov is used. In Panel A, it can be seen that asymptoticsignificance(2-tailed) of Kolmogorov-Smirnov Z is 0,000000. It means residuals are not normally distributed. This condition can be allowed because the number of firms as sample used in this study is large. According to central limit theorem stated byBowerman&O'Connel (2003), the larger number of samples, the closer average value near the normal distribution will be. In this research context, the average value mentioned belongs to residuals. To detect multicollinearity, the values of variance inflation factor (VIF)of independent variablesare used. According to Ghozali (2016), multicolliniearity does not exist in this regression model when these values are less than 10. Based on the informationin Panel B, value of VIF for BZ, BI, and PBV is 1.021, 1.010 and 1.010. Because all values of VIF are less than 10, multicollinearity does not happen.

Table 2. Normality test result and multicolinearity detection

Panel A. Normality test result on residuals			
N	756		
Kolmogorov-Smirnov Z	3.377		
Asymp. Sig. (2-tailed)	0.000		
Panel B. Multicollinearity detection result			
Independent Variable	BZ	BI	PBV
Variance Inflation Factor	1.021	1.010	1.010

Source: Modified Output of IBM SPSS

Table 3 presents a result of White heteroskedasticity test. This test is conducted by comparing a probability value of Chi-Square (3) for Obs*R-square with 5% significance level. Based on information in Table 3, the probability value of Chi-Square (3) is 0.1151. This value is greater than value of significance level used. Therefore, heteroskedastisticty does not happen in a regression model.

Table 3. The result of White Heteroskedasticity Test

F-statistic	1.981216	Prob. F(3,752)	0.1154
Obs*R-squared	5.928407	Prob. Chi-Square(3)	0.1151
Scaled explained SS	114.4453	Prob. Chi-Square(3)	0.0000

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 09/13/17   Time: 19:57
Sample: 1 756
Included observations: 756

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.265922	0.064277	4.137149	0.0000
BI^2	-0.433110	0.242417	-1.786630	0.0744
BZ^2	-0.002688	0.001484	-1.810877	0.0706
PBV^2	7.58E-05	0.000293	0.58266	0.7963

Source: Output of E-Views Program

Table 4 shows a result of autocorrelation test by using a test of runs based on mode value of residuals. The test is done by comparing a value of asymptotic significance (2-tailed) with 5% significance level. According to Ghozali (2016), if this value exceeds 5%, autocorrelation does not exist in the regression model. Based on information in Table 4, the value of asymptotic significance (2-tailed) is 0.959. Because this value is greater than 5%, autocorrelation is not available in the regression model.

Table4. Runs Test Result

Description	Residuals
Test Value[a]	4.34637[b]
Cases < Test Value	755
Cases >= Test Value	1
Total Cases	756
Number of Runs	3
Z	0.052
Asymp. Sig. (2-tailed)	0.959
a. Mode	
b. There are multiple modes. The mode with the largest data value is used.	

Source: Output of IBM SPSS

After fulfilling tests of classical assumptions, the estimation of regression coefficient is conducted. The result of model estimation can bee seen in Table 5. This table shows the estimation result of regression model to test the impact of board Size, board independency, and investment opportunity on debt policy.

Table 5. Estimation Result Of Regression Model With Pooled Data: The Impact of Board Size, Board Independency, and Investment Opportunity On Debt Policy

Independent Variable	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
(Constant)	0.834	0.060	14.013	0.000
BZ	-0.031	0.007	-4.218	0.000
BI	-0.249	0.112	-2.218	0.027
PBV	-0.014	0.004	-3.900	0.000

Source: Modified Output of IBM SPSS

Result of Hypothesis Test

The first hypothesis states that board size has a negative impact on debt policy.This hypothesis is tested by comparing a probability value (Sig.) of t-statistic for BZ with 5% significance value. If the probability value is less than 5%, the first hypothesis is accepted. In this table, the probability value of t-statistic for BZ is 0.0000and regression coefficient shows a negative sign. Because of this condition, the first hypothesis is accepted.

The second hypothesis states that board independence has a negative impact on debt policy. This hypothesis is tested by comparing a probability value (Sig.) of t-statistic for BI with 5% significance value. If the probability value is less than 5%, the second hypothesis is accepted. In this table, the probability value of t-statistic for BI is 0.0027 and regression coefficient shows a negative sign. Because of this condition, the second hypothesis is accepted.

The third hypothesis states that investment opportunity has a negative impact on debt policy. This hypothesis is tested by comparing a probability value (Sig.) of t-statistic for PBV with 5% significance value. If the probability value is less than 5%, the third hypothesis is accepted. In this table, the probability value of t-statistic for BI is 0.0000 and regression coefficient shows a negative sign. Because of this condition, the third hypothesis is accepted.

Discussion

The test result of the first hypothesis states a negative impact of board size on debt policy is available. This evidence confirms the statement of Berger, *et al.* (1984) and Easterbrook (1984) and also supports the study ofHeng, *et al.* (2012), Ranti (2013) andAbobakr&Elgiziry (2016). Firm having the big number of supervisory board tends to own small amount of debt in order to avoid the bankruptcy. Avoiding the bankrupcty is essential for the members of supervisory board to be done because they have an authority as the representative of shareholders to ensure the firm managed by the member of director board can operate well as usual.

The test result of the second hypothesis states there is a negative impact of board independency on debt policy. This evidence confirms statement of Wen *et al.*, (2002) in Abor (2007) and confirms the study of Boroujeni, *et al.* (2013) and Purag, *et al.* (2016). The independent members ofsupervisory board can objectively assessthe performance of the directorswithout any interventions from other board members. Theycan fire the directors or managers having bad performance. Because of this condition, directors tend to work hard to decrease the amount of debt that the firm has. By doing it, directors will still have its position because the firm can overcome the bankruptcy issue.

The test result of the third hypothesis states there is a negative impact of investment opportunity on debt policy. This evidence confirms the statement of Smith & Warner, (1979) and Lang, et al (1996) and confirms the study of Vakilifard,*et al.*(2011),Mahmodi&Khaneghah (2013) andHadianto (2015).The decrease in the amount of debt reflects the effort of managers to avoid the wealth transfer from firm to creditors in the future. It is because the projects that managers handle by borrowing money from creditors tend to be succesfull.

Conclussion and Recomendation

The aim of this study is to test an impact of board size, board independency and investment opportunity on debt policy. To test the impact of these three independent variables on debt policy, test of t-statistic is used to test three hypotheses. This result of this study concludes that board size, board independency and investment opportunity have a negative impact on debt policy. Based on this conclussion, following recomendations are made for two parties: next researchers and creditors.

1. For next researchers.
   a. Debt policy is actually determined not only by size and independency of supervisory board, but also firm growth, profitability, size,tangibility,board duality, external auditors, institutional and managerial ownership. Therefore, next researchers are suggested using the mentioned variables to be entered into their research model so that the model can reveal more facts related to those variables.
   b. This study only employs nine years as the time period of observations by using manufacturing firms. The next researcher is suggested extending the time periodsfrom 9 years to 15 years and using not only manufacturing firms but also the non-financial firms consisting of firms form various industry sectors. By doing them, next research resulted will have the strong ability of generalization across the long period of time.

2. For creditors.

   To get a firm with strong monitoring of supervisory board, creditors are advised to considerand select the firm with the large members of board and the large portion of independent membersof board if they want to lend money to firm. The firm with these characteristics can push managers to pay debt and interest regularly to creditors.

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