

THE INFLUENCE OF COLLATERALIZED ASSETS, PROFITABILITY, INCOME TAX, NON-DEBT TAX SHIELD, FIRM SIZE AND GROWTH ON CAPITAL STRUCTURE

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Abstract : *The objective of this research is to get empirical evidence about the influence of collateralized assets, profitability, income tax, non-debt tax shield, firm size and growth on capital structure. The sample of this research is 43 observations from real estate and property companies listed in Indonesia Stock Exchange. The choosing of the samples is based on purposive sampling technique which is continuously registered in Indonesia Stock Exchange during the period of 2006 until 2010. The result of this research showed that collateralized assets, income tax and non-debt tax shield have influence to capital structure. While profitability, firm size and growth have no influence to capital structure.*

Keywords : Capital structure, collateralized assets, income tax, non-debt tax shield.

Abstrak : Tujuan penelitian untuk mendapatkan bukti empiris pengaruh koleteral aset, profitabilitas, pajak penghasilan, *non-debt tax shield*, ukuran perusahaan dan pertumbuhan terhadap struktur modal. Sampel penelitian menggunakan 43 perusahaan *real estate* dan *property* yang terdaftar di Bursa Efek Indonesia dari 2006 sampai 2010. Hasil penelitian menunjukkan bahwa koleteral aset, pajak penghasilan dan *non-debt tax shield* berpengaruh terhadap stuktur modal. Sedangkan profitabilitas, ukuran perusahaan dan pertumbuhan tidak berpengaruh terhadap struktur modal.

Kata kunci : Struktur modal, koleteral aset, pajak penghasilan, *non-debt tax shield*.

INTRODUCTION

Funding issues is a very important part of the business world, it relates to the interests of many parties such as creditor, shareholder, as well as the management company itself. Funding decisions regarding some things; first the decision on establishing the necessary financial sources to finance investment. Source of funds that will

be used to finance this investment can be external sources and internal source. External sources consist of debt and equity. While internal source consists of retained earnings. Second, the determination of spending the best or often called the optimum capital structure. The optimum capital structure considered long term debt and equity with average capital cost is minimal.

Therefore necessary to determine whether the company use external sources from debt or equity. Errors in the decision making of this capital structure will result in costs that are not minimal. Because, have implications for the declining value of firm which means the decline in wealth for shareholders. The relationship between capital structure decision and firm value has been extensively investigated in the past few decades. Despite the theoretical appeal of capital structure, a specific methodology has not been realized yet, which managers can use in order to determine the optimum capital structure. This may be due to the fact that theories concerning capital structure differ in their relative emphasis. For example, the trade-off theory emphasizes taxes, the pecking order theory emphasizes hierarchy, and the agency theory emphasizes interest conflict between shareholder with manager and shareholder with creditor. However, these theories provide some help in understanding the financing behavior of firms as well as in identifying the potential factors that affect the capital structure. In this time, the researcher would like to examine the determinants of capital structure decision in Indonesia companies by using the same independent variables used by Gill et al. (2009). Furthermore, there are several differences between this research and the previous one.

The research uses the samples of firms listed in Indonesia stock exchange while the previous research used the samples of firms listed in Mergent Online (<http://www.mergentonline.com/compsearch.asp>). And then, the research wants to specify the research area to real estate and property companies listed in Indonesia Stock Exchange, because real estate and property companies is a very promising field for development in Indonesia. Based on data from web site *BadanPusatStatistik*, Indonesia has potential of large population with 237,641,326 people in 2010 but the ratio of home ownership is quite low. In the last five years, home ownership ratio is gradually decreased from 81.24% to 79.06%, 79.25%, 79.36%, and 78% in 2010. This proves that the housing problem in

big cities but opportunity for developer especially real estate and property companies to take profit from provide housing need near big cities and other prospect area. In carrying out the construction whether residential, apartments, and buildings, a company very need of substantial funds. For the first, real estate and property business spending money and then after the project began and the unit began to be marketed they get a refund even profit. Therefore, real estate and property companies in Indonesia faced an important decision to improve its ability to earn income through the management of its resources and funding decisions to acquire these resources. Furthermore, this research will examine the data over fiveyear's period from 2006 until 2010 with 43 observations that used as samples research.

Agency Theory

Jensen and Meckling (1976) firstly introduced agency cost into the research on capital structure. They referred agency cost caused by the interest conflicts between shareholders and managers to "equity agency cost" and agency cost caused by the interest conflicts between shareholders and creditors to "debt agency cost". They also indicated that as the debt ratio rise, debt agency cost would increase and equity agency cost would decrease (Liang and Zheng 2005).

Trade-off Theory

According to trade-off theory, any increase in the level of debt causes an increase in bankruptcy, financial distress and agency costs, and hence decreases firm value. Thus, an optimal capital structure may be reached by establishing equilibrium between advantages (tax advantages) and disadvantages (financial distress and bankruptcy costs) of debt. In order to establish this equilibrium firms should seek debt levels at which the costs of possible financial distress offset the tax advantages of additional debt (Kardeniz et al. 2009).

Pecking Order Theory

The pecking order theory was developed by Myers and Majluf (1984) assume that there is asymmetric information among investors. The pecking order theory states that firms prefer internal to external financing and debt to equity, if they issue securities. When firms use external funds, they first prefer issuing the safest security that is debt, then convertible securities, and equity as a last resort. They use external financing only when their internal funds are insufficient (Kardeniz *et al.* 2009).

Signaling Theory

Signaling effect was proposed by Ross in 1977 based on asymmetric information. This theory states that investors believe higher levels of debt will imply higher quality and higher future cash flows. This means that lower quality firms with higher expected costs of bankruptcy at any level of debt cannot follow the steps of higher quality firms by incurring more debt (Olayinka 2011).

Collateralized Assets and Capital Structure

Collateralized assets are asset pledged as security for payment of debt and specifically for the protection of creditor. And then collateralized assets are ratio that measures the composition of fixed assets owned by a company such as land, buildings, machinery and equipment compared to the overall value of assets of the company. Al-Najjar and Taylor (2008) mention that "The more tangible the firm's assets are, the more such assets can be used as collateral." So the firm can tender these assets to lender as collateral and issue more debt to take the advantage of this opportunity. Trade-off theory also suggests a positive relationship between collateralized assets and capital structure because firm with relatively safe tangible assets tend to borrow more than firm with risky intangible assets. However, agency theory suggests negative relationship between collateralized assets and capital structure because the tendency of manager to consume more than

the optimal level of perquisites may produce an inverse relationship between collateralized assets and debt level. Hypothesis proposed :

H₁ There is an influence of collateralized assets on capital structure.

Profitability and Capital Structure

Profitability is measures the overall effectiveness of company in generating profits by using the firm assets. In this research profitability represented by return on total assets (ROA) that compare earning available for common stockholder with total assets. Sheikh and Wang (2011), has carried out the research to assess the major factor in capital structure decision in manufacturing companies in Pakistan. The result shows that profitability has a negative relationship with capital structure. Because firm with increase profitability has more ability to maintain their financing and also prefers internal financing with use retained earnings. So more profitable company has a lower need for external financing and therefore should have lower capital structure. This confirms that firm finance activities following the financing pattern implied by the pecking order theory. Firms prefer to use internal generated fund when available and choose debt over equity when external financing required. And then from the point of view of the trade-off theory suggests a positive relationship between profitability and capital structure because firm with more profitable then it uses debt financing to get the benefit of tax shields on interest payment. And the firm believes can pay the cost of debt financing considering a high profit. Therefore, more profitable company should have higher capital structure because they have more income to shield from taxes. Hypothesis proposed :

H₂ There is an influence of profitability on capital structure.

Income Tax and Capital Structure

Income tax is a government levy on the income of individuals or businesses (corporations or other legal entities). When the tax is levied on

the income of companies, it is often called a corporate tax, corporate income tax, or profit tax. In this research income tax represented by effective tax rate which is compare tax paid with profit before tax.

According to the trade-off theory predicts a positive relationship between income tax and capital structure. Because companies can create strategies to reduce the tax cost of using debt financing in order to get a tax shield. Tax shield is a reduction in taxable income for an individual or corporation achieved through claiming allowable. For example, because interest on debt is a tax-deductible expense, taking on debt can act as a tax shield. A company with higher tax rates should use more debt to take the tax shield attractive incentives. Therefore, firms with higher tax rates will have higher capital structure. Hypothesis proposed :

H₃ There is an influence of income tax on capital structure.

Non-Debt Tax Shield and Capital Structure

Non-debt tax shield is the substitute of the tax shield on debt financing. It can reduce a company's tax bill caused by an increase tax-deductible expense, usually from annual depreciation or amortization expense. Deesomsak et al. (2004) in Sheikh and Wang (2011) reported a negative relationship between non-debt tax shield and capital structure; because depreciation or amortization expense is the substitute of the tax shield on debt financing. Tax laws (PSAK No.16, Revision 2007) allow certain tax deductions to be made from a company's taxable income. Non-debt tax shield often found in the company's financial statements are depreciation expense. Depreciation of fixed assets is the systematic allocation of costs at the time of initial acquisition and after the acquisition costs can be capitalized. Therefore, firm with higher non-debt tax shield, ceteris paribus, is expected to use less debt in their capital structure. Hypothesis proposed :

H₄ There is an influence of non-debt tax shield on capital structure.

Firm Size and Capital Structure

Firm size can be concluded as how large or small a company that reflected by firm's total assets, total sales, total equity, or firm's market value. And then firm with large size have bigger opportunity to access external financing in the capital market rather than small company. In this research firm size represented by firm's total sales. Sheikh and Wang (2011) reported firm size has a positive impact on leverage. This finding is consistent with the implications of the trade trade-off theory suggesting that larger firm should operate at high debt levels due to their ability to diversify the risk and to take the benefit of tax shields on interest payments. And the other hand, the pecking order theory suggest a negative relationship between firm size and capital structure, because the issue of information asymmetry is less severe for large firm. Therefore, large firm should borrow less due to their ability to issue informational sensitive securities like equity. Hypothesis proposed :

H₅ There is an influence of firm size on capital structure.

Growth and Capital Structure

Growth can be concluded as the increase or change in some financial characteristic of a company's. It reflected by the percentage of change in firm's total sales, total revenue, total assets, market capitalization, earning per share, or dividend per share compared to a base year amount. In this research growth represented by the percentage of change in firm's total assets compared to a base year amount. According to trade-off theory, the retained earnings of high growth increase and the firm issue more debt to maintain the target debt ratio. So, positive relationship between growth and capital structure is expected in this argument. On the other hand, agency problem predicts a negative relationship because firm with greater growth have more flexibility to invest in the future, thus, expropriate wealth from debt holder to shareholder. In order to retrain these agency conflict, firm with high growth should borrow less. Hypothesis proposed:

H₆ There is an influence of growth on capital structure.

Indonesia Stock Exchange during the period 2006 until 2010. The method used is purposive sampling. Through the data collection and selection process, the samples used in this research are 43 observations. The following table summarizes the samples used in this research.

RESEARCH METHODS

Research Object Description

In this research, the researcher uses the real estate and property companies that listed in

Table 1 Research Object Description

Description	Number of Company	Number of Data
Number of the real estate and property firms listed for the year 2006 – 2010.	50	250
Number of the real estate and property firms not listed in 2005.	(5)	(25)
Number of the real estate and property firms not published financial statement as of December 31 in full 2006 – 2010.	(3)	(15)
Numbers of the real estate and property firms have not positive earnings after tax for the year 2006 – 2010.	(27)	(135)
Number of outlier data		(32)
Number of data that used as sample research		43

Operational Definition and Measurement of Variables

Capital structure is the proportions of debt and equity financing maintained by the firm with the main objective is to maximize firm’s market value. In this research capital structure represented by debt ratio. The scale used is a ratio scale. Debt ratio can be calculated as follows (Gitman 2009, 64).

$$Debt\ Ratio = \frac{Total\ Liabilities}{Total\ Assets}$$

Collateralized assets are asset pledged as security for payment of debt and specifically for the protection of creditor. And then collateralized assets are ratio that measures the composition of fixed assets owned by a company such as land, buildings, machinery and equipment compared

to the overall value of the assets of the company. The scale used is a ratio scale. Collateralized assets can be calculated using following formula (Sayeed 2011, 25).

$$Collateralized\ Assets = \frac{Fixed\ Assets}{Total\ Assets}$$

Profitability is the overall effectiveness of company in generating profits by using the firm’s assets. In this research, profitability represented by return on total assets. The scale used is a ratio scale. Return on total assets can be calculated using following formula (Gitman 2009, 68).

$$Return\ on\ total\ assets = \frac{Earning\ available\ for\ common\ stockholder}{Total\ assets}$$

Income tax is government levy on the income of an individual or business. When the tax levy on the company it is often called corporate income tax. In this research income tax represented by effective tax rate. The scale used is a ratio scale. Effective tax rate can be calculated using following formula (Sayeed 2011, 24).

$$\text{Effective Tax Rate} = \frac{\text{Tax Paid}}{\text{Profit Before Tax}}$$

Non-debt tax shield is the substitute of tax shield on debt financing. It can reduce firm's tax bill caused an increase tax-deductible expense from annual depreciation or amortization. The scale used is a ratio scale. Non-debt tax shield can be calculated using following formula (Sheikh and Wang 2011, 124).

$$\text{Non - debt Tax Shield} = \frac{\text{Depreciation Expenses}}{\text{Total Assets}}$$

Firm size is how large or small a company is. In this research firm size represented by firm total sales. The scale used a ratio scale. Firm size can be calculated using following formula (Sheikh and Wang 124, 2011).

$$\text{Size} = \text{Natural logarithm of Sales}$$

Growth is the increase or change in some financial characteristic of a company's value which represented by the percentage of change in firm's total assets compared to a base year amount. The scale used a ratio scale. Growth can be calculated by using the following formula (Buferna et al. 2005, 17).

$$\text{Growth Rate} = \frac{\text{Total Assets}_t - \text{Total Assets}_{t-1}}{\text{Total Assets}_{t-1}}$$

RESEARCH RESULT

Table 2 Descriptive Statistic

Variable	n	Minimum	Maximum	Mean	Std. Deviation
Collateralized assets	43	0.00631	0.21763	0.0605802	0.06103492
Profitability	43	0.00359	0.09547	0.0481521	0.02523999
Income tax	43	0.13108	0.81103	0.4083372	0.19950343
Non-debt tax shield	43	0.00208	0.20893	0.0615816	0.04948028
Firm size	43	24.22611	27.95597	26.4668162	1.11511356
Growth	43	-0.20271	0.38218	0.1029505	0.11582251
Capital structure	43	0.05877	0.79285	0.4845940	0.19383494

Table 3 Hypothesis Testing Result

Variable	B	T	Sig.
Constant	0.323	0.433	0.668
Collateralized assets	-1.169	-2.198	0.035
Profitability	0.546	0.411	0.684
Income tax	0.395	2.366	0.023
Non-debt tax shield	1.789	3.060	0.004
Firm size	-0.004	-0.132	0.895
Growth	0.362	1.383	0.175

From table 3, Sig. value 0.035 lower than alpha 0.05 and B -1.169 which means there is a negative influence of collateralized assets on capital structure which is consistent with the research conducted by Gill *et al.* (2009), Olayinka (2011), Pandey (2001), Kardeniz *et al.* (2009), Sheikh and Wang (2011) and also agency theory that suggests collateralized asset has negative influence to the capital structure. And then, Sig. value 0.684 higher than alpha 0.05 which means there is not influence of profitability on capital

structure. This result is consistent with the research conducted by Sayeed (2011), Seftianne and Handayani (2011).

And then, Sig. value 0.023 lower than alpha 0.05 and B 0.395 which means there is an positive influence of income tax on capital structure which is consistent with the research conducted by Sayeed (2011) and also trade off theory that suggests income tax has positive influence to the capital structure. Sig. value 0.004 lower than alpha 0.05 and B 1.789 which means there is an positive influence of non-debt tax shield on capital structure.

And then, Sig. value 0.895 higher than alpha 0.05 which means there is not influence of firm size on capital structure which is consistent with the research conducted by Gill *et al.* (2009), Kardenizet *al.* (2009), Tekeret *al.* (2009), Joni and Lina (2010), Farah and Ramadhan (2010). The last, Sig. value 0.175 higher than alpha 0.05 which means there is not influence of growth on capital structure which is consistent with the research conducted by Gill *et al.* (2009), Teker *et al.* (2009) Kardenizet *al.* (2009), Sheikh and Wang (2011).

CONCLUSION

The result shows that collateralized assets have negative influence to capital structure. Income tax and Non-debt tax shield have positive

influence to capital structure. Profitability, firm size, growth have no influence to the capital structure. There are several deficiencies and limitations in this research. First, this research has only analyzed the data in five year period from 2006 to 2010, the result maybe more accurate if the next research will be used longer period. Second, the data used in this research is only from real estate and property companies in the Indonesia Stock Exchange, so this result not really sure if can applicator in other sector. The last, in this research only 6 independent variables that used such as collateralized assets, profitability, income tax, non-debt tax shield, firm size and growth. So, there are still other independent variables that might be influence to capital structure but not study in this research. Based on the result and limitation in this research, there are several recommendation for the future research. First, the research in the future should extend the research period to increase the accuracy of the research. Second, the research in the future should include more industries rather than only real estate and property companies, so it can more generalized the result of research. The last, research in the future should consider other important factors that may influence the capital structure.

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