Determinants of Debt Policy of Real Estate and Property Companies Listed on the Indonesia Stock Exchange

Endri Endri[1]*, Bob Mustafa[2], Oscar Rynandi[3]

[1]Universitas Mercubuana, Jakarta, Indonesia, [2,3]Politeknik Negeri Pontianak, Indonesia. *Email: endri@mercubuanaa.ac.id

ABSTRACT

This study aims to examine and analyze the effect of corporate tax rate (CTXR), non-debt tax shield (NDTS), investment opportunity set (IOS), profitability, and sales growth to the level of debt (leverage) on real estate and property companies listed on Indonesia Stock Exchange Period 2011-2015. This study uses panel data regression with fixed effect model to estimate 40 companies selected through purposive sampling. The results showed that CTXR, NDTS, IOS, profitability, and sales growth have a significant effect simultaneously on debt level. Partially, from the five independent variables are known there are three variables that significantly affect the leverage of CTXR, IOS, profitability, while the other two variables namely NDTS and Sales Growth have no significant effect. This shows that NDTS and sales growth statistically does not affect the level of debt in the real estate and property companies listed on the Indonesia Stock Exchange.

Keywords: Tax, Shield, Profitability, Leverage, Property
JEL Classifications: E10, E32, E60

1. INTRODUCTION

Decisions on funding have a strategic role for the welfare of owners and the survival of the company, this is related to the need for funds for investment and determination of funding sources. The capital structure of each company is determined by taking into account various aspects on the basis of possible access to funds, the courage to bear the risk, the analysis of costs and benefits derived from each source of funds. Prior to making decisions related to funding, management is required to consider and analyze whether the company's funding needs are met by its own capital or with loan capital (debt). The capital structure is reflected in the book value of leverage ratio that is the ratio of total debt (short term plus long term) to total assets at book value (Yuliani et al., 2014).

When the company suffers a deficit in funding after using its own capital, then the company will use the debt as a source of funds from parties outside the company. Debt as part of the capital structure, helps to meet the need for operational and investment

funds quickly when compared to the process of acquiring funds through the sale of shares or retained earnings. Liquidity factors and high interest rates that can increase the risk of loss, an important consideration in owing. High interest rates result in inefficient cost of funds for the Company. Some literature and research indicate that if a Company has a debt, it will benefit from tax benefits, from the debt tax shield. This directly resulted in the Company's tax burden being reduced (Endri, 2018).

Real estate and property companies have a tendency to emphasize calculations on the cost of fund effect of interest on loans rather than tax benefits that may be derived from the interest cost of the loan by prioritizing the use of corporate funds aimed at reducing the risk of capital costs. The problem at the moment is that many property companies finance their projects use their own funds and have difficulties in their settlement. Based on data from Bank Indonesia's survey on residential property prices in Table 1 shows the average of real estate and property industries in Indonesia in the fourth quarter of 2011-2015 utilize the largest source of

Table 1: Source of funding for real estate and property industry

Source of funding	Quarter IV (%) 2011	Quarter IV (%) 2012	Quarter IV (%) 2013	Quarter IV (%) 2014	Quarter IV (%) 2015
Internal fund	56.76	53.56	57.79	61.97	61.52
Retained earning	20.96	39.17	41.11	26.94	24.02
Paid-up capital	28.06	42.14	38.17	34.75	26.10
Joint venture	5.95	16.09	5.16	2.33	1.85
Others	45.03	2.6	15.56	35.97	9.54
External fund	43.24	46.44	42.21	38.03	38.48
Bank loan	28.18	31.97	29.35	26.32	28.66
Customer	11.21	9.09	10.69	8.81	7.31
Non-bank financial institutions	1.11	3.17	1.33	1.32	0.80
Others	2.74	2.21	0.84	1.58	1.71

Source : Residential Property Price Survey Bank Indonesia

funding from own funds in the range of 50-62%, while funds from outsiders only range 38-47%. The Bank Indonesia survey shows that real estate and property companies in general use more funds from their own funds.

Based on the financial statements of real estate and property companies listed on the Indonesia Stock Exchange, the ratio of debt to total assets held in the range of 38-40% as shown in Table 2. In Table 1, it is known that debt level of real estate and property companies in general for loans from banks and non-bank financial institutions that usually bear interest, relatively lower, i.e. between 27 and 36%. This indicates a gap phenomenon between the debt ratio of the Bank Indonesia survey results in the real estate and property industry in general with the debt ratio data from 40 samples of financial statements of real estate and property go public companies that have been processed by researchers.

Research by Tirsono (2008) on the influence of taxes and other factors on manufacturing firms listed on the Indonesia Stock Exchange still uses a progressive tax rate, if the greater taxable income using a progressive rate then the greater the tax burden of the company which must be borne. While with the current flat rate, Corporate Income tax rate will remain at 25%, regardless of taxable income. This difference certainly does not reduce the company's efforts to minimize corporate tax payments by reducing the basis of imposition of corporate income tax. Therefore this study attempts to test whether there is also a significant relationship between taxes with fixed corporate tax rate (CTXR) of 25% with debt levels in real estate and property firms listed on the Indonesia Stock Exchange, as there has not been much research done in Indonesia on the effect of tax on debt for companies in the industry.

There are several factors that influence leverage, including CTXR, non-debt tax shield (NDTS), investment opportunity set (IOS), profitability and sales growth. The formulation of research problem is whether there is influence of CTXR, NDTS, IOS, profitability and sales growth to leverage on real estate and property companies listed in Indonesia Stock Exchange period 2011-2015.

2. THEORETICAL FOUNDATION AND HYPOTHESES DEVELOPMENT

Managers need to consider tax benefits when develop the capital structure (Ehrhardt and Eugene, 2011). Tax benefits are highly

Table 2: Debt ratio to real estate company and property assets which is listed on BEI

Year	2011	2012	2013	2014	2015
Debt/asset	38.94%	38.34%	39.56%	39.12%	38.06%

Source: Company Financial Statements that have been processed

valued for companies with high tax burden. The determination of the capital structure reflects the amount of resources that the firm is well utilizing without being burdened by the cost and interest of its lending (Abrori et al., 2014).

2.1. Arbitrage Pricing Theory (APT)

Ross et al. (2002) formulated a theory called APT. Like the Capital Asset Pricing Model (CAPM), APT illustrates the relationship between risk and income, but by using different assumptions and procedures. The difference between the CAPM model and the APT model lies in the APT treatment of the relationship between the securities return. APT assumes that the rate of profit is influenced by various factors in the economy and industry. The APT model is formulated as follows (Tandelilin, 2001):

$$R_i = E(R_i) + b_{i1}f_1 + b_{i2}f_2 + \ldots + b_{in}f_n + e_i$$

Description:
R_i = The actual return rate of securities i
b_{i1} = Expected return on securities i
f = Systematic factor deviation F of the expected value
b_i = Sensitivity of securities i to factor i
e_i = Random error

2.2. Capital Structure

Capital structure theory was originally pioneered by Modigliani and Miller which produced two portfolios of hypotheses in MM Theory. The first hypothesis contains all the equity of the unlevered firm, so the portfolio value is Vu (u = unlevered firm). The Company may pay EBIT in its entirety in the form of dividend to the investor because there is no purpose of investment or asset addition and no tax liability. The second portfolio, the company with conditions similar to the first portfolio, but some funding using debt, whose portfolio value is formulated into VL (L = leveraged firm). Funding consists of Stocks/Stock (St) and Debt/Debt (D) so that the sum is the total value of the company (VL) (Ehrhardt and Eugene, 2011). MM Theory II further introduces an additional variable of "side effects" i.e. tax shield,

which encourages companies to use tax benefits from debt use in the capital structure.

2.3. Agency Theory
The agency theory arises because of differences in interests between managers and shareholders, who have different goals in the company. According to Brigham and Houston (2011) this conflict occurs when a company has cash surplus, it is often a manager when a company has excess cash using it to prosper itself. Its different if the company has limited free cash flow than the manager will not expend vain.

2.4. Trade off Theory
The trade-off theory or the exchange theory according to Brigham and Houston (2011) is the theory that firms exchanging tax benefits from debt financing with the problems posed by potential bankruptcy.

2.5. Pecking Order Theory
This theory holds the view that if financial managers need funds because of lucrative investment opportunities, the company will choose to use internal funds first. If internal funds are insufficient, then the company will meet its funding needs first by issuing bonds, and the last step is to sell shares.

2.6. Signaling Theory
Fundamentally, this theory is related to the asymmetry between the company and potential investors. According to Brigham and Houston (2011), Signals are actions taken by a company's management to provide guidance to investors about how management assesses the prospects of the company. Companies with more profitable prosecutions will avoid selling stocks, while less profitable companies will choose to fund through share sales.

Based on theories above will explain the factors that influence the leverage as follows.

2.7. CTXR
Based on Modigliani and Miller II theories, there is a positive relationship between taxes and debt. Interest payments reduce the tax payable and if the company pays less tax, the greater the share of profits to be distributed to investors. The results of the research by Tirsono (2008) mentioned that CTXR positively and significantly affect the company's leverage level, in line with the research conducted by Clemente-Almendros and Francisco (2014) which states a positive relationship between CTXR and debt ratio in the company whose shares are listed on the Spanish stock exchange. The tax rate is calculated from the corporate income tax expense paid last year (Corporate Tax^{t-1}) compared to net profit before interest and tax (EBIT) of current year, as follows:

$$\text{Corporate Tax Rate} = \frac{\text{Corporate Tax t - 1}}{\text{Earning Before Interest and Tax (EBIT)}}$$

2.8. NDTS
Under the trade-off theory, debt provides more benefits to the firm than to equity because there are tax shield benefits. Selfiani (2013) in her research in the banking sector found no significant

relationship between NDTS and debt levels. His research shows that depreciation does not affect debt, which means the debt is not used to finance investment in fixed assets, but to finance the company's operations. Research held by Yang et al. (2015) showed that NDTS significantly and negatively affect the total debt and short-term debt. With reference to these findings, the NDTS becomes an independent variable as measured by the sum of depreciation and amortization divided by total assets. to measure NDTSs as follows:

$$\text{Non - Debt Tax Shields} = \frac{\text{Depreciation}}{\text{Earning Before Depreciation, Interest and Tax (EBDIT)}}$$

2.9. IOS
Based on Pecking Order theory, the companies that are developing if they need funds are more likely to choose internal funding with retained earnings then reinvested, rather than external companies. If internal funds are insufficient, it will choose the debt with the smallest risk value. Research by Nijenhuis (2013) found a negative relationship between leverage with IOS or investment opportunities. While research conducted by Selfiani (2013) found a significant influence between investment opportunities with leverage. One version of Tobin's Q that has been simplified by Chung and Pruit (Sudiyatno and Elen, 2010) to measure investment opportunity variables/growth opportunities as follows:

$$\text{Tobin's Q Ratio} = \frac{\left(\text{Current Price} \times \text{Total Shares}\right) + \text{Total Liabilities}}{\text{Total Assets}}$$

2.10. Profitability
Based on Pecking Order theory, firms tend to choose internal rather than external funding, so companies with high profitability have low external funding requirements, so that company leverage is also low (Acaravci, 2015). Nijenhuis's (2013) study shows that profitability increases negatively with the addition of debt. While research conducted by Selfiani (2013) shows a positive relationship between profitability and leverage. Profitability is the level of net profit measured by dividing operating income by total assets as follows:

$$\text{Profitability} = \frac{\text{Operating income}}{\text{Total Asset}}$$

2.11. Sales Growth
Under Pecking Order theory, firms tend to choose internal rather than external funding. Previous research by Qamar et al. (2016) i.e. Sales Growth has no significant effect on policies related to financing or non-financial corporate debt. This is different from Atiqoh (2016) i.e. Company with high sales growth rate, will tend to use debt in its capital structure. Real estate and property firms prioritize internal funding for each project that can not yet measurable by its acceptability level. That is influenced by the risk of market acceptance on each property project is different from

one to another. Companies with stable sales growth will have it easier to obtain external funds. The growth is calculated as follows:

$$\text{Sales Growth} = \frac{\text{Sales t} - \text{Sales t -1}}{\text{Sales t}}$$

The framework is presented in Picture 1.

2.12. Hypotheses
- Hypothesis 1: CTXR affect the level of debt (leverage)
- Hypothesis 2: NDTS effect on the level of debt (leverage)
- Hypothesis 3: IOS affect the level of debt (leverage)
- Hypothesis 4: Profitability of the company affect the level of debt (leverage)
- Hypothesis 5: Sales Growth affect the level of debt (leverage).

3. RESEARCH METHOD

This research is an explanatory research that is testing the proposed hypothesis, to get the results and conclusions that exist in the hypothesis. The research approach used is causality, that is to analyze the influence of independent variables on the dependent variable to each other quantitatively so that can be explained the relationship and influence of these variables using data measured in a numerical scale or numbers related to research problems. The dependent variable used in this research is leverage, while the independent variables there are CTXR, NDTS, profitability, IOS and sales growth.

The population in this study are property companies listed in Indonesia Stock Exchange period 2011-2015 which amounted to 48 companies. While the sample research taken from the existing population by using purposive sampling technique, with the following sample criteria:
1. A property company who listed on the Indonesia Stock Exchange and have not merged yet or acquired or delisted during the study period.
2. Property companies that have financial reports published publicly during the period 2011-2015.
3. The company has debt during the study period,

Based on the criteria from the above samples, the authors get a sample with the number of 40 companies (Table 3).

The data obtained from the data collection then analyzed with panel data regression analysis model using Eviews 8.0 software which aims to know the influence of tax rate, non tax debt shields, IOS,
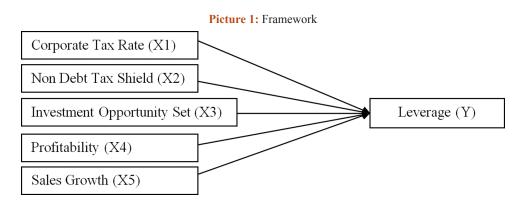
Picture 1: Framework

Table 3: Sample research

No	Companies	Code	No	Companies	Code
1	Agung Podomoro Land Tbk.	APLN	21	Greenwood Sejahtera Tbk.	GWSA
2	Alam Sutera Realty Tbk.	ASRI	22	Jaya Real Property Tbk.	JRPT
3	Bekasi Asri Pemula Tbk.	BAPA	23	Kawasan Industri Jababeka Tbk.	KIJA
4	Bekasi Fajar Industrial Estate Tbk.	BEST	24	Lamicitra Nusantara Tbk.	LAMI
5	Bhuwanatala Indah Permai Tbk.	BIPP	25	Eureka Prima Jakarta Tbk.	LCGP
6	Bukit Darmo Property Tbk.	BKDP	26	Lippo Cikarang Tbk.	LPCK
7	Sentul City Tbk.	BKSL	27	Lippo Karawaci Tbk.	LPKR
8	Bumi Serpong Damai Tbk.	BSDE	28	Modernland Realty Tbk.	MDLN
9	Cowell Development Tbk.	COWL	29	Metropolitan Kentjana Tbk.	MKPI
10	Ciputra Development Tbk.	CTRA	30	Metropolitan Land Tbk.	MTLA
11	Ciputra Property Tbk.	CTRP	31	Metro Realty Tbk.	MTSM
12	Ciputra Surya Tbk.	CTRS	32	Indonesia Prima Property Tbk.	OMRE
13	Duta Anggada Realty Tbk.	DART	33	Plaza Indonesia Realty Tbk.	PLIN
14	Intiland Development Tbk.	DILD	34	Pakuwon Jati Tbk.	PWON
15	Duta Pertiwi Tbk.	DUTI	35	Ristia Bintang Mahkotasejati Tbk	RBMS
16	Bakrieland Development Tbk.	ELTY	36	Roda Vivatex Tbk.	RDTX
17	Megapolitan Developments Tbk.	EMDE	37	Pikko Land Development Tbk.	RODA
18	Fortune Mate Indonesia Tbk.	FMII	38	Danayasa Arthatama Tbk.	SCBD
19	Gowa Makassar Tourism Development Tbk.	GMTD	39	Suryamas Dutamakmur Tbk.	SMDM
20	Perdana Gapuraprima Tbk.	GPRA	40	Summarecon Agung Tbk.	SMRA

Source: Indonesia Stock Exchange (IDX)

profitability level, and sales growth on corporate leverage. However, before the panel data regression analysis, descriptive statistical analysis, panel data and hypothesis testing will be conducted.

4. RESULTS

4.1. Data and Descriptive Statistics
Descriptive data that generated by using Eviews 8 presented in the Table 4. Leverage variables have a mean value between 0.380619 and 0.395569 which indicates that the real estate and property companies in the sample studied on average have a debt rate per year of 38.06-39.55% of total assets. Maximum leverage value is 0.740222 in 2012 and minimum value is 0.016285 in 2013. CTXR variable shows mean value between −5.94802 and 0.124106 with maximum value of 6.341060 in 2013 and minimum value of −243,7721 in 2014 except in 2014, tax rates on real estate and property firms in the sample studied averaged 2.6-12.41% of EBIT per year.

NDTS variable has mean value between 0.013571 and 0.097269 which shows real estate and property companies in the sample studied have an average of depreciation value per year equal to

1.36-9.73% against EBDIT. Non tax debt value maximum 3.265868 in 2012 and the minimum value of −3.252716 in 2011. Variable IOS has a mean value between 1.073321 and 1.413231. The calculation of Tobin's Q ratio is on average >1 indicating that the average market value of real estate and property companies is higher than the carrying amount of the assets. The IOS value is a maximum of 3.964942 in 2015 and a minimum value of 0.166934 in 2015.

Profitability variable has a mean value between 0.107322 and 0.131246. This shows that real estate and property companies in the sample studied are able to produce an average operating profit per year of 10.73-13.12% of total assets owned. Maximum profitability value is 0.428727 in 2013 and minimum value is −0.025842 in 2013. Sales growth variable has mean value between 0.127452 and 0.694231. This shows that real estate and property companies in the sample studied on average have annual sales value growth of 12.74% up to 69.42% from the previous year. The Sales growth value is a maximum of 11.96852 in 2014 and the minimum value is −0.871240 in 2013.

Overall, from the descriptive data, the highest standard deviation is derived from the CTXR data, because the ratio uses the basis

Table 4: Descriptive statistics of research variables

Variable	2011	2012	2013	2014	2015
N	40	40	40	40	40
LEVRG	Leverage				
Mean	0.389447	0.383420	0.395569	0.391179	0.380619
Median	0.379370	0.384997	0.403591	0.404893	0.407534
Maximum	0.694154	0.740222	0.690677	0.644107	0.668377
Minimum	0.076977	0.071578	0.016285	0.063774	0.054539
Standard deviation	0.156643	0.156011	0.158091	0.154622	0.170502
CTXR	Corporate tax rate				
Mean	0.124106	0.026077	0.498528	−5.94802	0.117505
Median	0.114442	0.110833	0.106680	0.126843	0.135256
Maximum	0.470757	0.392096	6.341060	0.804258	5.460615
Minimum	−0.73398	−1.62312	−0.16103	−243.772	−5.13772
Standard deviation	0.193904	0.355851	1.440265	38.56766	1.281572
NDTS	Nondebt tax shield				
Mean	0.013571	0.019904	0.097269	0.088665	0.062165
Median	0.054846	0.038386	0.036773	0.044382	0.048215
Maximum	0.666373	3.265868	0.839955	1.009120	1.236593
Minimum	−3.25272	−3.25196	−0.05886	0.000876	−0.8848
Standard deviation	0.547500	0.773654	0.180706	0.161703	0.268521
IOS	Investment opportunity set				
Mean	1.073321	1.282036	1.268031	1.413231	1.242792
Median	1.019267	1.074232	1.076223	1.257154	1.009876
Maximum	1.903889	3.010647	3.500933	3.863738	3.964942
Minimum	0.241465	0.314884	0.320560	0.290243	0.166934
Standard deviation	0.405367	0.577366	0.677588	0.810232	0.852854
PROFIT	Profitability				
Mean	0.107322	0.117993	0.131246	0.124073	0.127467
Median	0.111628	0.121489	0.127400	0.133693	0.131037
Maximum	0.250992	0.249269	0.428727	0.222504	0.340170
Minimum	0.004401	−0.0247	−0.02584	0.024167	0.002063
Standard deviation	0.061588	0.056398	0.077224	0.051123	0.072384
SLSGWT	Sales growth				
Mean	0.335213	0.433255	0.372641	0.694231	0.127452
Median	0.237206	0.321131	0.257329	0.152054	0.056655
Maximum	1.735292	1.765908	2.987123	11.96852	4.369408
Minimum	−0.60423	−0.24379	−0.87124	−0.64727	-0.71119
Standard deviation	0.515624	0.478884	0.635262	2.278194	0.767849

Source: Data processed with eviews 8

of the calculation of the previous year's tax burden which is then divided by EBIT for the current year, so if the value of EBIT as the previous year's tax revenue share number is negative, Tax rate becomes negative.

4.2. Selection of Panel Data Regression Model
To select which panel data regression model to be used in this research will be analyzed further using Chow test and Hausman and Lagrange multiplier test. Based on the results of the tests in Tables 5 and 6 it can be concluded in Table 7 that fixed effects in panel data regression are used further in determinant Leverage of real estate and property companies listed on Indonesia Stock Exchange during 2011-2015 period. The Lagrange multiplier test is not performed in the selection of this model.

4.3. Estimation of Panel Data Regression Model
Table 8 below shows the recapitulation of estimates from the three panel data regression models whose purpose is to strengthen the conclusions of paired testing, which recommends the use of the Fixed Effect model to be analyzed further in this study. To select which model is best to be analyzed further in estimating panel data regression using R^2 coefficient of determination and adjusted

coefficient R^2. Based on Table 8 it is concluded that the fixed effect model is better than the other two data panel regression models to estimate the effect of CTXR, NDTS, profitability, investment opportunity (IOS) and sales growth to the leverage of property companies listed in Indonesia Stock Exchange for the period 2011-2015.

4.4. Panel Data Regression Estimation
The fixed effect model applied in this research is a model that eliminates the problem of heteroscedasticity by concealing its residual using white-heteroskedasticity, while the autocorrelation problem is not required in the Fixed Effect model so that the test of autocorrelation is negligible. The result of panel data regression estimation by using Fixed Effect model with white-heteroskedasticity is shown in Table 9 as follows:

Based on the results of regression analysis above, it can be obtained a regression line equation as follows:

$$LEVRG = 0.399136 + 0.000436\,CTXR + 0.007236\,NDTS + 0.016596\,IOS - 0.265415\,PROFIT + 0.001011\,SLSGWT$$

4.5. Goodnes of Fit Model Test (R^2)
Goodness of fit test results, showing the coefficient of determination $R^2 = 0.950766$ which means that all independent variables; CTXR, NDTS, ios, profitability, and sales growth can explain the ups and downs of leverage of real estate and property companies by 95.07%, while the remaining 4.93% is explained by factors others not included in this model. While the value of the adjusted coefficient of $R^2 = 0.936790$, which means after considering the degree of freedom (degree of freedom), all independent variables used in this study are able to explain the variations that occur in the leverage of real estate and property companies by 93.68% (Table 10).

Table 5: Chow test
Effects test	Statistic	d.f.	Prob.
Cross-section F	15.901305	(39.155)	0.0000
Cross-section Chi-square	321.926523	39	0.0000

Source: Data processed with eviews 8

Table 6: Hausman test
Test summary	Chi-square statistic	Chi-square d.f.	Prob.
Cross-section random	15.850515	5	0.0073

Source: Data processed with eviews 8

Table 7: Kesimpulan Pengujian model regresi data panel Dengan leverage sebagai dependent variable
Test	Model tested	Result
Chow test	Common effect versus fixed effect	Fixed effect
Hausman test	Fixed effect versus random effect	Fixed effect
Lagrange multiplier (LM)	Common effect versus random effect	Test not performed

Table 8: Panel data regression estimates for all three models
Model	R^2	Adjusted R^2	F-statistic	Prob (F-statistic) $\alpha=0.1$	Dependent variabel	Probability $\alpha=0.05$	
Common effect	0.085462	0.061891	3.625787	0.003699	LEVRG	CTXR	Not significant
						NDTS	Not significant
						IOS	Not significant
						PROFIT	Significant
						SLSGWT	Not significant
Fixed effect	0.817128	0.765216	15.74062	0.000000	LEVRG	CTXR	Not significant
						NDTS	Not significant
						IOS	Not significant
						PROFIT	Significant
						SLSGWT	Not significant
Random effect	0.030022	0.005023	1.200926	0.310224	LEVRG	CTXR	Not significant
						NDTS	Not significant
						IOS	Not significant
						PROFIT	Not significant
						SLSGWT	Not significant

Source: Data processed with eviews 8

4.6. Hypothesis Testing

The results of hypothesis testing with Test F can be seen the value of constant C has coefficient of 0.399136 so it can be interpreted that the overall independent variable influence the dependent variable positively. Prob value (F-Statistic) is equal to 0.0000 $<\alpha = 0.05$ meaning H_0 refused and H_a accepted. This shows that the independent variables of CTXR, NDTS, IOS, profitability, and sales growth have a significant effect on Leverage with a confidence level of 95%. While the t-test results concluded that from the five independent variables are known there are three variables that significantly affect the Leverage of CTXR, IOS, profitability (PROFIT) while the other two variables namely NDTS and sales growth (SLSGWT) have no significant effect.

Based on regression panel analysis of fixed effect data model for each company can be concluded real estate and property companies that have sensitivity change Leverage biggest during period of time 2011-2015 is Gowa Makassar Tourism Development Tbk. (GMTD) with a total constant value of {Ci + 0.399136} = 0.260705 + 0.399136 = 0.659841. While real estate and property companies that have the least change sensitivity Leverage during the period 2011-2015 is Eureka Prima Jakarta Tbk. (LCGP) with a total constant value of {Ci + 0.399136} = − 0.35821 + 0.399136 = 0.040926.

5. DISCUSSION OF RESULTS

Based on the result of the analysis on CTXR variable that shows the influence to the significant and positive leverage. The management of real estate and property companies utilizes debt as a potential tax shield that can reduce taxes. The higher the tax rate will encourage companies to make tax payment savings, one of them by adding debt, because debt interest is a deductible expense for tax deductibles. These results support the Modigliani and Miller II

Table 9: Estimation results of panel data regression fixed effect model

Variable	Coefficient	Standard error	t-statistic	Prob.
C	0.399136	0.008168	48.86673	0.0000
CTXR	0.000436	0.000154	2.830252	0.0053
NDTS	0.007236	0.005706	1.268030	0.2067
IOS	0.016596	0.004031	4.117096	0.0001
PROFIT	−0.265415	0.075949	−3.494672	0.0006
SLSGWT	0.001011	0.000545	1.854093	0.0656
R^2	0.950766			
Adjusted R^2	0.936790			
S.E. of regression	0.075287			
F-statistic	68.02853			
Prob (F-statistic)	0.000000			

Source: Data processed with eviews 8

theory statements which suggest that there is a positive relationship between tax and debt. Interest payments reduce the tax payable and if the company pays less tax, the greater the share of profits to be distributed to investors. The results support previous research by Tirsono (2008) and Clemente-Almendros and Francisco (2014) that CTXR has a positive and significant effect on the level of debt (leverage).

Based on the result of analysis to NDTS variable shows the influence to Leverage which is not significant. The management of real estate and property companies does not use depreciation as an alternative to tax deductions, since most of the funds are used for operations rather than investing in fixed assets, such as buildings or facilities that are long-term to own and not for sale. In contrast to the manufacturing industry, which utilizes depreciation of machine assets in addition to increasing its production capacity as well to increase its depreciation burden as an alternative to Tax Shield other than debt. The study supports the trade-off theory which states that the debt provides more benefits to the firm than the equity due to the tax shield, and supports previous research by Singh (2016) that NDTS has a positive but insignificant effect on the level of debt (leverage).

Based on result of analysis to variable of opportunity set investment show influence to Leverage which is significant and positive. Real estate and property company management tends to take advantage of the opportunity to add debt, if there is an opportunity to invest, by purchasing a land bank or developing a subsidiary engaged in the construction sector to support the parent company's activities. In accordance with the pecking order theory, a growing company if it requires funding is more likely to choose funding that comes from internal that is with retained earnings that are then reinvested, rather than the external company. If internal funds are not enough, it will choose the debt with the smallest risk value. These results are relevant to research by Ghi (2016) which concludes that Growth Opportunities positively affects the debt and research ratios performed by Tirsono (2008) and Selfiani (2013) which find significant influence between IOS and leverage.

Pursuant to result of analysis to profitability variable that indicated an influence to Leverage which is negative and significant. It is seen that the management of real estate and property companies tends to prioritize the use of internal funds obtained through retained earnings. The higher the company's ability to earn Profit, the more Profit is withstand to be used to fund its operations, thereby reducing the management of real estate and property companies to take advantage of operational funds from the addition of debt. These results support the Pecking Order Theory which states that firms tend to choose internal rather than external

Table 10: Hypothesis testing results

Variable	Coefficient	Standard error	t-statistic	Prob.	+/−	Description	Result
CTXR	0.000436	0.000154	2.830252	0.0053	+	Significant	H_1: Accepted
NDTS	0.007236	0.005706	1.268030	0.2067	+	Not Significant	H_2: Rejected
IOS	0.016596	0.004031	4.117096	0.0001	+	Significant	H_3: Accepted
PROFIT	−0.265415	0.075949	−3.494672	0.0006	−	Significant	H_4: Accepted
SLSGWT	0.001011	0.000545	1.854093	0.0656	+	Not Significant	H_5: Rejected

Source: Data processed with eviews 8

funding, so companies with high profitability have low external funding needs, so that the firm leverage is also low (Acaravci, 2015). If there is an increase in profits, the increase in cashflow will increase the ability to pay off existing debts, thereby reducing the proportion of the leverage of real estate and property companies. The conclusion supports previous research by Nijenhuis (2013) and Manihuruk and Sumiati (2016) that profitability is negatively related to the addition of debt and the proportion of debt (leverage) in the capital structure.

Based on the result of analysis to Sales Growth variable shows the influence to Leverage is not significant. The researcher concludes that the existence of selling rate uncertainty contributes to the consideration of debt usage in fulfillment of operational capital of real estate and property companies. These results support pecking order theory, since real estate and property management companies need to prioritize internal funding for each project that can not yet be gauged for the level of market acceptability. The results of this study support previous research by Qamar et al. (2016) that Sales Growth has no significant effect on policies related to financing or debt of non-financial companies. A project has a fairly unique risk associated with unsold risk. So the management of real estate and property companies need to prioritize internal funding for each project that can not yet be measured in the level of its market acceptability. This is related to cashflow, if the project is funded from debt. The entire sales period of the unit in a residential project for example can occur within a few years and can not be determined permanently of its sales value from time to time, whereas bank interest payments, for example, are fixed and scheduled.

6. CONCLUSION

Based on the result of the research, it is known that CTXR, NDTS, IOS, profitability, and sales growth together significantly influence debt level. Partially, from the five independent variables are known there are three variables that significantly affect the leverage of CTXR, IOS, profitability. The results of this study are in accordance with Modigliani and Miller II theories that mention the role of tax in the determination of capital structure, especially corporate debt and pecking order theory, which is companies that have investment opportunities and a good profitability have low external funding needs because companies tend to choose internal funding rather than external. Two other independent variables, namely NDTS and sales growth have no significant effect. These results support the pecking order theory, since real estate and property management companies need to prioritize internal funding for each project that can not be measured in terms of market acceptability, nor use external funds for fixed asset replenishment, but for operational funds. So statistically proven NDTS and sales growth does not affect the level of debt in the real estate and property companies listed on the Indonesia Stock Exchange.

Suggestions that can be given from the results of research conducted are as follows:
1. For the management of companies engaged in the real estate and property sector, it is necessary to consider CTXR, IOS and profitability of the company in policy making related to additional capital through debt.
2. For investors who will invest in real estate and property companies, the level of debt (leverage) owned property companies can be used as an indicator of how good the profitability and the possibility of the company as a place to invest from IOS parameter.
3. Further research can add variables such as tangibility of assets, liquidity, earnings volatility and firm size, and use variable NDTS applied to other proxies, for example tax loss carryforward and investment tax credit.
4. Further research if using the variable tax rate tax is expected to use the pure tax burden of corporate income tax calculated from EBIT so it is not biased in determining the amount of CTXR that is borne in real terms.
5. Further research can be extended especially for real estate and property companies that have not gone public to know the determinants of corporate debt policy in closed companies.

REFERENCES

Abrori, H., Pardomuan, S., Pindarwin, O.B.S. (2014), Analisa determinan struktur modal perusahaan yang terdaftar dalam indeks kompas 100 (tahun 2008-2010). Journal of Capital Market and Banking, 2, 1-25.

Acaravci, S.K. (2015), The determinants of capital structure: Evidence from the Turkish manufacturing sector. International Journal of Economics and Financial Issues, 5, 158-171.

Atiqoh, Z. (2016), Pengaruh kinerja keuangan, size, pertumbuhan penjualan, dan kepemilikan saham terhadap struktur modal. Jurnal Ilmu dan Riset Akuntansi, 5, 20-30.

Brigham, E.F., Houston, D.J.F. In: Yulianto, A.A., editor. (2011), Dasar-Dasar Manajemen Keuangan. 1st ed. Jakarta: Salemba Empat.

Clemente-Almendros, J.A., Francisco, S.M. (2014), The effect of taxes on the debt policy of spanish listed companies. SERIEs Journal of the Spanish Economic Association, 7, 359-391.

Ehrhardt, M.C., Eugene, F.B. (2011), Corporate Finance: A Focused Approach. 4th ed. Mason: South-Western Cengage Learning. p609-620.

Ghi, T.N. (2016), The determinants of the capital structure of the real estate firms in Vietnam. International Journal of Information Research and Review, 3, 2734-2739.

Manihuruk, W., Sumiati, D. (2016), Determinants of capital structure and the role of capital structure on firm value. European Journal of Business and Management, 8, 182-194.

Nijenhuis, K.T. (2013), Important Factors in Determining the Capital Structure of a Company. Empirical Evidence from Dutch Companies. Master Thesis. Netherlands: University of Twente.

Qamar, M.A.J., Umar, F.A., Hamayun, A., Waheed, A. (2016), Determinants of debt financing and their moderating role to leverage-performance relation: An emerging market review. International Journal of Economics and Finance, 8, 300-311.

Ross, S.A., Randolph, W.W., Jeffrey, F.J. (2002), Corporate Finance. 6th ed. New Delhi: McGraw Hill.

Selfiani, S. (2013), Analisis pengaruh faktor pajak, investment opportunity set (IOS), profitability, dan non performing loan (NPL) terhadap tingkat utang pada perusahaan perbankan yang terdaftar di bursa efek Indonesia. Jurnal TEKUN, 4, 169-182.

Singh, D. (2016), A panel data analysis of capital structure determinants: An empirical study of non-financial firms in Oman. International Journal of Economics and Financial Issues, 6, 1650-1656.

Sudiyatno, B., Elen, P. (2010), Tobin's Q dan Altman Z-score sebagai

indikator pengukuran kinerja perusahaan. Kajian Akuntansi, 2, 9-21.

Tandelilin, E. (2001), Analisis Investasi dan Manajemen Portofolio. 1st ed. Yogyakarta: BPFE.

Tirsono, T, (2008), Analisis Faktor Pajak Dan Faktor-Faktor Lain Yang Berpengaruh Terhadap Tingkat Utang Pada Perusahaan-Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Jakarta. Master Thesis. Jakarta: Universitas Diponegoro Semarang.

Yang, Y., Che, H.B.H., Mohamed, A.B., Xiang, Z. (2015), Determinants of debt across sectors: Evidence from Chinese a share listed firms. The Journal of Developing Areas, 49, 391-405.

Yuliani, H.M.A., Rasyid, H.U., Yuliansyah, M.D. (2014), Determinan struktur modal dan pengaruhnya terhadap nilai perusahaan pada pasar yang sedang berkembang (studi pada sektor real estate and property). Jurnal Manajemen Usahawan Indonesia, 43, 27-52.