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Non-Mutually Exclusive Trade-off and Pecking Order Theories: A Study in Indonesia

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Abstract:
Research aim: This study aimed to strengthen empirical evidence that the trade-off (TOT) and pecking order (POT) theories in Indonesia are non-mutually exclusive.
Design/methodology/approach: This study employed a sample of 636 manufacturing companies from 2014 to 2018.
Research finding: The results revealed that companies in Indonesia used a Capital Structure consistent (CS) with the TOT and POT, or in other words, the TOT and POT theories are non-mutually exclusive.
Theoretical contribution/originality: This study is different from previous research on data analysis strengthened by separating underleveraged and overleveraged companies.
Practitioner/Policy implication: CS in Indonesia is following the TOT if it is underleveraged and according to POT if it is overleveraged.
Research limitation/implication: This study has the limitation of only using a sample of manufacturing companies in Indonesia. Subsequent research can provide comprehensive results by increasing the sample of all companies excludes the financial sector.
Keywords: TOT; POT; Non-mutually Exclusive; Complementarity; Under Leverage; Overleverage

Introduction

This research is driven by different research results on the theory of CS used in several countries, including Indonesia. The research conducted by Ahmed and Hisham (2009) in Malaysia, Atiyet (2012) in France, and Ruslim (2009), and Culata and Gunarsih (2012) in Indonesia showed that the CS is following the TOT. Meanwhile, the research results carried out by Al-Qudah (2012) in Jordan, Bundala (2012) in Tanzania, and Tandyo (2015) in Indonesia uncovered that the CS is consistent with the POT.

Besides, the research undertaken by Zhang and Kanasaki (2007) in Japan, Al-Najjar, and Taylor (2008) in Jordan, Harjito (2011), Ratri and Christianti (2017), and Wiagustini, Ramantha, Sedana, and Rahyuda (2017) in Indonesia revealed that the CS is corresponding to the TOT and POT. It indicates that the CS is complementary (not mutually exclusive).

The TOT and POT have advantages and disadvantages. The TOT has the advantage that companies can get tax savings, but it has weaknesses, namely agency conflicts between shareholders and debt holders and the risk of bankruptcy (Stglitz, 1969; Jensen & Meckling, 1976). In comparison, the POT has advantages, namely a low bankruptcy risk because companies prioritize internal sources of funds, but it has a weakness that managers can act opportunistically (Myers & Majluf, 1984; Myers, 2001).

Companies whose CS aligns with the TOT and POT strive to obtain a targeted CS to attain high firm value. It can be explained that underleveraged companies finance investments using debt to a certain extent according to the targeted CS, and the drawbacks are using retained earnings or issuance of new shares (Surwanti, 2015). Zhang and Kanasaki (2007) disclose that companies finance fixed assets and the deficit of internal sources of funds through debt, and the drawbacks use retained earnings. Also, Al-Najjar and Taylor (2008) confirm that organizations pay for the deficit of internal sources of funds and fixed assets using debt, and the drawbacks employ retained earnings.

This study differs from previous studies conducted by Zhang and Kanasaki (2007) and Wiagustini et al. (2017) by replacing the internal funding deficit variable with investment cash flows. It is because the investment cash flow variable presented in the cash flow statement in the Annual Financial Report (LKT) is considered more comprehensive than the internal funding deficit. Investment cash flows include interest received, temporary investment placement, receipt of other receivables, acquisition of fixed assets, proceeds from sales of fixed assets, proceeds from the sale of stock investments, additional advances for purchases of fixed assets, dividends received from associated companies, adjustments to the translation of the financial statements of subsidiaries, and additional pre-operating expenses.

This study aims to find empirical evidence that the TOT and POT complement each other. An underleveraged company can increase debt to obtain a targeted CS, consistent with the TOT. Overleverage companies can reduce debt using retained earnings or issuance of new shares to attain a targeted CS and avoid the risk of bankruptcy; this is in agreement with the POT. Investors can use various references for selecting company shares according to return and risk preferences, namely companies that can generate high profits even though they have high debt.

Literature Review and Hypotheses Development

Capital Structure (CS)

CS is the proportion of debt to equity (Koh, Ang, Brigham, & Ehrhardt, 2014). CS can be measured using leverage, which is the proportion of debt and assets (Rajan & Zingales, 1995). The higher the leverage indicates that the company uses debt more than its capital to finance assets.

Trade-Off Theory (TOT)

The TOT explains that a company tries to adjust its debt level to achieve a targeted level of debt to obtain tax savings, but the company avoids financial difficulties and agency conflicts between the company and its creditors (Stiglitz, 1969; Jensen & Meckling, 1976). The bigger the debt, the bigger the interest cost, the lower the profit before tax, so that the tax that must be paid is lower. The bigger debt has implications, namely, the greater the company gets tax savings, but the greater the risk faced by the company, namely liquidity difficulties that can lead to bankruptcy.

An underleveraged company can increase its debt to a certain extent to obtain tax savings, but the company can avoid liquidity difficulties. Overleverage companies can reduce their debt level by issuing new shares if the share price is high (Jalilvand & Harris, 1984; Hovakimian, Opler, & Titman, 2001) or increasing retained earnings if the stock price is low (Hovakimian et al., 2001).

Pecking Order Theory (POT)

The POT elucidates that the funding policies carried out by the company follow a hierarchy (sequence), namely, first, companies prefer funding from internal sources. Second, dividend payments are adjusted to investment opportunities, and the amount of dividend payments is kept constant, or if it changes, it is done in stages. Third, dividend policy is constant (sticky); if the company has excess cash and there is no investment opportunity, these funds can be used to pay debts or invest in marketable securities (Myers, 1984; Myers & Majluf, 1984; Myers, 2001).

Companies, which need funds but have insufficient internal sources of funds use external sources of funds in order, namely long-term debt or bonds, hybrid bonds (for example, convertible bonds), and issuance of new shares as a last resort to avoid information asymmetry (Myers, 1984; Myers & Majluf, 1984; Myers, 2001). Information asymmetry can lead to underpricing because investors are unwilling to pay a fair price according to management (Myers, 1984; Myers & Majluf, 1984; Myers, 2001).

The POT explains the hierarchy (order) of funding so that the company does not have target leverage or does not consider the leverage level targeted as in the TOT (Myers, 1984; Myers & Majluf, 1984). Fund requirements are determined by investment needs, including increases in fixed assets, working capital, and dividend payments (Shyam-Sunder & Myers, 1999). This theory assumes that, first, managers act according to the shareholders' wishes and ignore the differences in interests between old shareholders and new shareholders. Second, shareholders are passive and act rationally by changing the portfolio if it is not following company policy (Myers, 2001).

TOT and POT

CS theory, namely the TOT and POT, is complementary (non-mutually exclusive) (Zhang & Kanasaki, 2007; Al-Najjar & Taylor, 2008; Harjito; 2011; Ratri & Christianti, 2017;

Wiagustini et al., 2017). Zhang and Kanasaki (2007) found that company growth is financed using retained earnings, while the deficit of internal sources of funds is paid off through debt.

Al-Najjar and Taylor (2008) discovered that companies with a large business risk prioritize using retained earnings, but large companies finance their fixed assets and their growth using debt because they are considered capable of paying off their debts. Harjito (2011) found that large companies finance fixed assets using debt because retained earnings obtained from company profits are still insufficient. Moreover, Ratri and Christianti (2017) uncovered that organizations with a high business risk concentrate on utilizing held income, yet they pay off increased sales through debt. Wiagustini et al. (2017) exposed that the internal funding deficit is financed using retained earnings, but companies are trying to obtain a targeted CS.

Previous Research

The previous study results showing that the CS is compliant with the TOT were carried out by Ahmed and Hisham (2009). They conducted research using a sample of companies in Malaysia from 1999 to 2003. The results revealed that the internal funding deficit had a positive effect on CS. Meanwhile, the non-debt tax shield, company size, asset structure, and growth did not affect. This finding could be concluded that the CS is following the TOT.

Ruslim (2009) conducted a study employing a sample of non-financial companies in Indonesia that were members of the LQ45 Index 2000-2006. The results showed that the internal funding deficit and long-term debt positively affected the CS, while profitability did not affect. This finding could be concluded that the CS is consistent with the TOT.

Atiyet (2012) carried out research using a sample of companies in France in 1999-2005. The results uncovered that the targeted internal funding deficit and debt positively affected the CS. These findings indicated that the CS is in line with the TOT.

Culata and Gunarsih (2012) examined a sample of companies in Indonesia in 2009-2010. The results disclosed that profitability and asset structure positively affected CS; this is consistent with the TOT. Meanwhile, company size and non-debt tax shield did not affect. These findings signified that the CS is in keeping with the TOT.

In comparison, the research result, which indicated that the CS is according to the POT, is Tandya (2015), who conducted research utilizing a sample of companies in Indonesia in 2009-2013. The results exposed that profitability, company size, and growth opportunities had a negative effect on CS; this is consistent with the POT. Meanwhile, tangibility did not affect CS. These findings denoted that the CS agrees with the POT.

Al-Qudah (2012) studied a sample of mining companies in Jordan from 2005-2008. The results found that profitability negatively influenced CS; this is in line with the POT.

Company growth, asset structure, and company size did not affect. These findings could be implied that the CS is consistent with the POT.

Bundala (2012) investigated a sample of non-financial firms in Tanzania from 2006 to 2012. The results discovered that profitability and tangibility had a negative effect on CS; it supports the POT. Company size, liquidity, dividend policy, and company growth did not affect. These findings could be inferred that the CS agrees with the POT.

Meanwhile, the research results that showed the CS according to the TOT and POT were carried out by Zhang and Kanazaki (2007), who researched the sample of non-financial firms in Japan in 2002-2006. The results showed that profitability and growth opportunities negatively affected CS; it reinforces the POT. The deficit in internal sources of funds, company size, non-debt tax shield, and tangibility had a positive effect; this is consistent with the TOT. These findings suggested that the POT and the TOT are complementary.

Al-Najjar and Taylor (2008) conducted a study using a sample of non-financial companies in Jordan in 1999-2003. The results showed that profitability and business risk had a negative effect on CS; this is following the POT. Growth opportunities, company size, and tangibility had a positive effect; this is consistent with the TOT. Liquidity and dividend policy did not affect the CS. It could be concluded that the POT and the TOT are complementary.

Harjito (2011) researched a sample of companies in Indonesia from 2000 to 2010. The results revealed that profitability negatively impacted CS, supporting the POT. Asset structure and company size had a positive effect; this is in consort with the TOT. Company growth did not affect CS. These findings could be reckoned that the POT and the TOT are complementary.

Using a sample of property and real estate companies in Indonesia from 2012 to 2015, Ratri and Christianti (2017) carried out a study, where the results uncovered that profitability, liquidity, business risk, and company growth had a negative effect on CS. It is consistent with the POT. Meanwhile, company size had a positive effect on CS; it supports the TOT. These findings could be inferred that the POT and the TOT are complementary.

Wiagustini et al. (2017) inspected a sample of non-financial companies in Indonesia in 2010-2013. The internal funding deficit was shown to have a negative effect on leverage; this is in line with the POT. Meanwhile, the targeted debt had a positive effect; this is consistent with the TOT. It could be concluded from these findings that the POT and the TOT are complementary.

Hypothesis Development

The Effect of Profitability on CS

Profitability is the company's ability to generate profits using its assets (Koh et al., 2014). Based on the TOT, profitability positively affects CS. It can be explained that the company in an underleveraged condition tries to increase its debt to obtain tax savings. The profit earned is used to pay dividends so that retained earnings as a source of internal funds are reduced. Profitability had a positive effect on CS, supported by research results from Hadianto and Tayana (2010), Margaretha and Ramadhan (2010), Culata and Gunarsih (2012), and Rao, Kumar, & Madhavan (2019). Based on this description, the following hypothesis could be formulated.

H_{1a}: Based on the TOT, profitability has a positive effect on CS.

In contrast, based on the POT, profitability has a negative effect on the CS. It can be described that the greater the profit earned by the company can lead to greater retained earnings so that it can be used as a source of internal company funds, resulting in decreased debt. Profitability negatively influenced CS, as the research results from Rajan and Zingales (1995), Baker and Wurgler (2002), Cassar and Holmes (2003), Tong and Green (2005), Alti (2006), Zhang and Kanasaki (2007), Al-Najjar and Taylor (2008), Harjito (2011), Bundala (2012), Tandya (2015), Rahmawati (2016), Enakirerhi and Chijuka (2016), Ratri and Christianti (2017), and Nugroho and Harmadi (2018). Based on this explanation, the following hypothesis could be formulated.

H_{1b}: Based on the POT, profitability has a negative effect on the CS.

The Effect of Investment Cash Flow on CS

Investment cash flow is the acquisition and disposal of long-term assets and other investments that do not include cash to generate income in the future. Investment cash flows include interest received, temporary investment placement, receipt of other receivables, acquisition of fixed assets, proceeds from sales of fixed assets, proceeds from the sale of stock investments, additional advances for purchases of fixed assets, dividends received from associated companies, adjustments to the translation of the financial statements of subsidiaries, and additional pre-operating costs.

Based on the TOT, investment cash flow has a positive effect on the CS. It can be elucidated that the company attempts to increase debt to obtain tax savings so that the source of funds used to finance investment comes from debt. It is supported by the research results by Zhang and Kanasaki (2007), Al-Manaseer, Gonis, Al-Hindawi, and Sartawi (2011), Atiyet (2012), and Wiagustini et al. (2017). Based on this description, the following hypothesis could be formulated.

H$_{2a}$: *Based on the TOT, investment cash flow has a positive effect on the CS.*

Meanwhile, according to the POT, investment cash flow has a negative effect on the CS. It can be explained that companies investing will experience a deficit in internal funding. The internal funding deficit will be financed using a source of funds derived from retained earnings to decrease debt. It is reinforced by the research results of Byoun and Rhim (2003) and Nguyen, Ho, & Vo (2019). A hypothesis could be formulated based on these descriptions, as follows.

H$_{2b}$: *Based on the POT, investment cash flow has a negative effect on the CS.*

The Effect of Asset Structure on CS

Asset structure (tangibility) is the comparison between fixed assets and total assets owned by the company. Based on the TOT, asset structure has a positive effect on CS. It can be explicated that the company in an underleveraged condition tries to increase debt to obtain tax savings so that the source of funds used to finance the asset structure comes from debt. Besides, fixed assets can be used as collateral for the debt. Asset structure positively influenced CS, reinforced by the research results of Rajan and Zingales (1995), Zhang and Kanasaki (2007), Omran and Pointon (2009), Al-Najjar and Hussainey (2011), and Nugroho and Harmadi (2019). A hypothesis could be formulated based on these descriptions, as follows.

H$_{3a}$: *Based on the TOT, asset structure has a positive effect on CS.*

According to the POT, asset structure negatively impacts CS. It can be stated that the funds used to finance fixed assets come from retained earnings as an internal source of funds so that debt decreases. Research results from Eldomiaty (2007), Al-Najjar and Taylor (2008), Al-Najjar and Hussainey (2011), Bundala (2012), El-Masry (2016), and Enakirerhi and Chijuka (2016) support that asset structure negatively affected CS. Based on this description, the following hypothesis could be formulated.

H$_{3b}$: *Based on the POT, asset structure has a negative effect on CS.*

The Effect of Non-debt Tax Shield on CS

A non-debt tax shield is an expense other than interest costs that can be used to reduce taxes (Zhang & Kanasaki, 2007). In this study, the non-debt tax shield is a depreciation expense. Depreciation is an expense that does not incur cash. Because it is a cost, it can be used to reduce (save) taxes.

According to the TOT, the non-debt tax shield has a positive effect on the CS. It can be explained that the company tries to increase debt to obtain tax savings so that the source of funds used to finance fixed assets comes from debt. Besides, fixed assets can be used as collateral for the debt. The non-debt tax shield had a positive effect on CS, as corroborated by the research results of Zhang and Kanasaki (2007), El-Masry (2016), and Enakirerhi and Chijuka (2016). The following hypothesis could be formulated based on these descriptions.

H_{4a}: *Based on the TOT, the non-debt tax shield has a positive effect on the CS.*

In contrast, the non-debt tax shield negatively affects the CS based on the POT. It can be elucidated that depreciation and amortization costs can be employed as sources of internal funds to finance the company to decrease debt. Supported by research results from Viviani (2008), Ray (2012), Gao (2016), and Dewi and Dana (2017), the non-debt tax shield negatively impacted CS. Based on this description, the following hypothesis could be formulated.

H_{4b}: *Based on the POT, the non-debt tax shield has a negative effect on the CS.*

The Effect of Company Size on CS

Company size is the size of a firm, which can be calculated using the company's sales. Based on the TOT, company size positively impacts CS. It can be explained that the company is in a condition of increasing debt to obtain tax savings so that the source of funds used to finance high sales comes from debt. Large company profits are not utilized as a source of internal funds because the company distributes large dividends. Research results from Rajan and Zingales (1995), Baker and Wurgler (2002), Tong and Green (2005), Alti (2006), Zhang and Kanazaki (2007), Al-Najjar and Taylor (2008), Harjito (2011), Enakirerhi and Chijuka (2016), Rahmawati (2016), Ratri and Christianti (2017), and Pamungkas (2019) found that company size had a positive effect on CS. A hypothesis could be formulated based on the description, as follows.

H_{5a}: *Based on the TOT, company size has a positive effect on CS.*

Based on the POT, company size negatively influences the CS. It can be specified that large companies can diversify so that they can get high sales and increase profits, which can be employed to increase retained earnings as an internal source of funds, causing debt to decrease. Company size negatively influenced CS, reinforced by research results from Hogfeldt and Oborenko (2005), Ajanthan (2103), Deitiana and Anggraini (2014), Tandya (2015), El-Masry (2016), and Rao et al. (2019). Based on this description, the following hypothesis could be formulated.

H_{5b}: *Based on the POT, company size has a negative effect on the CS.*

Research Methods

Research Sample

This study's population was manufacturing companies that went public from 2014 to 2018. The sampling technique employed a purposive sampling method. The criteria used were companies submitting complete financial reports that match the needs of research variables to the Indonesia Stock Exchange (IDX) and had positive equity. The research data were secondary in the form of annual financial reports (LKT) obtained from the Indonesia Stock Exchange and the Indonesia Capital Market Directory (ICMD). The number of research samples utilized to test the hypothesis is presented in Table 1.

Table 1 Research Sample

Description	2014	2015	2016	2017	2018	Total
Population	141	143	146	156	163	749
Companies that did not submit annual financial reports	2	2	4	4	2	14
Incomplete data	5	5	6	6	8	30
Companies that had negative equity	1	1	-	2	3	7
Outlier data	13	9	12	13	14	61
The number of samples for hypothesis testing	120	126	124	131	136	636

Variables and Measurements

This study's dependent variable was the CS measured using changes in leverage (D_LEV) (Baker & Wurgler, 2002; Hogfeldt and Oborenko, 2005; Mahajan and Tartaroglu, 2008; Susilawati, 2012; Celik & Akarim, 2013; Pamungkas, 2019). Meanwhile, the independent variables consisted of profitability (PRF), investment cash flow (ICF), asset structure (TNG), non-debt tax shield (NTS), and company size (FS). The formula used is as follows.

$D\_LEV = LEV_t - LEV_{t-1}$
LEV = Total debt / Total assets
(Baker & Wurgler, 2002; Hogfeldt & Oborenko, 2005; Mahajan & Tartaroglu, 2008; Susilawati, 2012; Celik & Akarim, 2013; Pamungkas, 2019)

PRF = EBITDA / Total assets
(Rajan & Zingales, 1995; Frank & Goyal, 2003; Flannery & Rangan, 2006; Kayhan & Titman, 2007; Zhang & Kanasaki, 2007)

ICF = Investment cash flow / Total assets
(Pamungkas, 2019)

TNG = Fixed assets / Total assets
(Rajan & Zingales, 1995; Baker & Wurgler, 2002; Frank & Goyal, 2003; Flannery & Rangan, 2006; Eldomiaty, 2007; Kayhan & Titman, 2007; Zhang & Kanasaki, 2007; Nugroho & Harmadi, 2018; Pamungkas et al., 2019)

| NTS = Depreciation / Total assets | (Flannery & Rangan, 2006; Eldomiaty, 2007; Zhang & Kanasaki, 2007; Nugroho & Harmadi, 2018) |
| FS = Log sales | (Rajan & Zingales, 1995; Baker & Wurgler, 2002; Frank & Goyal, 2003; Kayhan & Titman, 2007; Nugroho & Harmadi, 2018; Pamungkas et al., 2019) |

Analysis Plan

Hypothesis testing utilized panel data regression analysis. To select which method is the best between the FEM and REM, the Hausman test was used (Gujarati & Porter, 2009). Suppose the test results show significant (prob. <5%), the fixed effect method is used. The regression equation employed is as follows.

$$D\_LEV = b_0 + b_1PRF + b_2CFI + b_3TNG + b_4NTS + b_5FS + e$$

Results and Discussion

Descriptive Statistics

The companies had average leverage of 45.70% and tried to reduce the leverage by 9%. The companies had below-average leverage because they reduced the leverage by 2.62%, and those had above-average leverage because they increased the leverage by 0.38% (Table 2). Companies with below-average leverage could generate higher returns and invest more than companies with above-average leverage because of their lower interest expense and risk of financial difficulties.

Table 2 Descriptive Statistics

Description	Leverage below average	Leverage above average	Total leverage
LEV	0.2905	0.5800	0.4570
	0.1392	0.1407	0.0200
D_LEV	-0,0262	0.0038	-0.0900
	0.1062	0.0767	0.09196
PRF	0.0974	0.0595	0.0756
	0.0980	0.1039	0.1031
ICF	0.0584	0.0528	0.0552
	0.1061	0.0722	0.0881
TNG	0.3623	0.4148	0.3925
	0.1861	0.1915	0.1908
NTS	0.0298	0.0316	0.0309
	0.0174	0.0177	0.0176
FS	12.1874	12.4373	12.3448
	0.7062	0.6371	0.6713
N	270	366	636

Rows 1 and 2 show the average and standard deviation.

Hausman Test

The Hausman test results using the leverage sample below the average, above the average, and total leverage obtained probability values of 0.3571, 0.5970, and 0.0000, respectively (Table 3). It could be concluded that the sample of leverage below average and above average employed a REM, while the total sample of leverage utilized a FEM.

Table 3 Hausman Test Results

Description	Leverage below average Prob.	Leverage above average Prob.	Total leverage Prob.
Cross-section random	0.3571	0.5970	0.0000

The FEM requires the classic assumption test, namely the heteroscedasticity and autocorrelation test (Gujarati & Porter, 2009). The heteroscedasticity test results using the White method obtained a probability value of 0.8703. It could be inferred that there was no problem with heteroscedasticity in the regression model. Besides, the autocorrelation test results obtained the calculated DW value of 1.889, the table DW value in the sample size (N) of 650, the number of independent variables including the constant (k) of 6, and the dL and dU values of 1.853 and 1.890, respectively. It indicated that the calculated DW value was between dL and dU or the area of doubt. Thus, it could be concluded that there was no autocorrelation problem.

Hypothesis testing used a total leverage sample, while samples under and above leverage were employed to refine the analysis (Table 4). The analysis results showed that the profitability variable had a regression coefficient and a probability value of -0.2774 and 0.0000, respectively. These results indicated that hypothesis 1B was accepted, namely that profitability negatively affected leverage (Rajan & Zingales, 1995; Baker & Wurgler, 2002; Cassar & Holmes, 2003; Tong & Green, 2005; Alti, 2006; Zhang & Kanasaki, 2007; Al-Najjar & Taylor, 2008; Harjito, 2011; Bundala, 2012; Tandya, 2015; Rahmawati, 2016; Enakirerhi & Chijuka, 2016; Ratri & Christianti, 2017; Nugroho & Harmadi, 2018). It can be explained that the profits earned by the company can be used to increase retained earnings as a source of internal funds. Internal sources of funds can be utilized to reduce external sources of funds that come from debt. An increase in internal sources of funds is obtained from an increase in retained earnings because it receives an increase in profit and a reduction in dividend payments. It means that the CS is following the POT.

Regression Analysis Results

The investment cash flow variable had a regression coefficient and a probability value of 0.1440 and 0.0047, respectively. These results suggested that hypothesis 2A was accepted; namely, investment cash flow positively affected leverage (Zhang & Kanasaki, 2007; Al-Manaseer et al. 2011; Atiyet, 2012; Wiagustini et al., 2017). These findings specified that companies financed investment using debt. Based on these findings, the CS is consistent with the TOT. Companies finance investments using debt in the hope of obtaining tax savings but can avoid financial difficulties because the company is still able to generate sufficient profits, which can be used to pay debts. For companies with below-

average leverage, increasing debt is an effort to obtain a targeted CS. Besides, for companies with below-average leverage, financing investment using debt is a communication tool to external parties that the company has prospects for the future (Ross, 1977).

Table 4 Regression Analysis Results

	Leverage below average	Leverage above average	Total leverage
Description	Random effect	Random effect	Fix effect
C	-0.1082	0.1953	-0.0414
	(0.0000)	(0.00216)	(0.0077)
PRF	-0.1830	-0.1074	-0.2774
	(0.0054)	(0.0284)	(0.0000)
CFI	0.1267	0.2419	0.1440
	(0.0135)	(0.0000)	(0.0047)
TNG	0.0415	-0.0036	0.0027
	(0.2779)	(0.9008)	(0.9490)
NTS	-1.1120	-0.1771	-1.6530
	(0.0054)	(0.5539)	(0.0000)
FS	0.0066	-0.0175	0.0072
	(0.0004)	(0.0251)	(0.0001)
N	270	366	636
R-squared	0.1081	0.0810	0.4523
F-statistic	6.4000	6.3484	2.5800
Prob.	(0.0000)	(0.0000)	(0.0000)

Rows 1 and 2 show regression coefficient and probability values

The asset structure variable had a regression coefficient and a probability value of 0.0027 and 0.9490, respectively. These results could be concluded that the asset structure did not affect leverage (Pandey, 2004; Alti, 2006; De Bie & De Haan, 2007; Al-Najjar & Taylor, 2008; Harjito, 2011; Ajanthan, 2013; Celik & Akarim, 2013; Felicia & Saragih 2015; Pamungkas, 2019). This finding could be explained that the company financed fixed assets, not entirely using debt but also through internal sources of funds that came from retained earnings and depreciation. It implied that the CS is in line with the TOT and POT. The non-debt tax shield variable had a regression coefficient and a probability value of -1.6530 and 0.0000, respectively. These results indicated that the non-debt tax shield had a negative effect on changes in leverage (Zhang & Kanasaki, 2007; El-Masyri, 2016; Enakirerhi & Chijuka, 2016). It could be explained that depreciation is an internal source of funds used by the company so that the source of funds originating from debt can be reduced. It signified that the CS is according to the POT.

In companies with above-average leverage, depreciation cannot be fully used for internal sources of funds. It is supported by the finding that the non-debt tax shield did not affect leverage. It demonstrated that the CS agrees with the TOT and POT.

The company size variable had a regression coefficient and a probability value of 0.0072 and 0.0001, respectively. These results confirmed that firm size had a positive effect on leverage (Rajan & Zingales, 1995; Baker & Wurgler, 2002; Tong & Green, 205; Alti, 2006;

Zhang & Kanasaki, 2007; Al-Najjar & Taylor, 2008; Harjito, 2011; Enakirerhi & Chijuka, 2016; Rahmawati, 2016; Ratri & Christianti, 2017; Pamungkas, 2019). It could be illustrated that large companies could diversify their business to obtain loans easily with lower interest rates, thus encouraging companies to increase debt. It indicated that the CS is keeping with the TOT.

Companies with above-average leverage tended to reduce debt. It was taken for fear of experiencing financial difficulties. It is supported by the finding that company size had a negative effect on leverage. Whereas in companies with below-average leverage, they tended to increase their debt, which was taken to obtain tax savings. It is supported by the finding that company size positively affected leverage. Surwanti's (2015) research results showed that companies made adjustments to their CS, consistent with the TOT. However, the funds used to reduce debt prioritized the use of retained earnings; It agrees with the POT. If the company prioritizes the issuance of new shares, there is a concern that there will be asymmetric information so that the stock price will be low (Myers & Majluf, 1984). Based on this description, the CS in Indonesia is compliant with the TOT and POT (complementarity).

Conclusion

Companies used earned profits and depreciation as internal sources of funds so that debt could be reduced; this is in line with the POT. Investment expenditure was financed using debt; this is consistent with the TOT. Large companies tended to use sources of funds from debt; this is in line with the TOT. However, in a condition of overleverage, they attempted to reduce debt; this agrees with the POT. Based on this description, it could be concluded that the TOT with POT is complementary.

This study has the limitation of only using a sample of manufacturing companies in Indonesia. Subsequent research can provide comprehensive results by increasing the sample of all companies excludes the financial sector.

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