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An Additional Evidence: Pecking Order Theory in Indonesia

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Abstract

The paper aims to determine the leverage deviation and the impact of firm size on the leverage deviation. We have collected 504 pooled data from the Indonesia Stock Exchange (IDX) from 2009 to 2020. The model estimates have been analyzed by OLS regression, where regress, the deviation of leverage, and firm size is the explanatory variable. Our spurious prevention model controls growth and tangible assets. Our finding is that the company's overleverage is greater than the under leverage of 504 units of observation. OL type companies, characterized by asset volatility with firm size and lower debt ratio, tend to follow the POT hierarchy. They prefer debt issuance over equity; the actual leverage is lower than the target leverage. In contrast, companies characterized by UL with higher volatility in assets in place with firm size and higher debt ratio than OL tend to follow the PDT hierarchy. As a result, they issue equity over debt, and then large companies issue equity in the presence of information asymmetry. It is possible that the modal structure is dynamic and will require testing of time series or data panels. We leave that explicit analysis for future research.

INTRODUCTION

A semifinal paper (Myers & Majluf, 1984) linking information asymmetry with adverse selection problems in financing has been recognized by. Pecking Order Theory (POT) relates information asymmetry with the funding hierarchy. When equity issuance is sensitive to asset-in-place information, managers can fulfill it through internal funding, then external. Those who act in the best interests of shareholders will issue securities when overvalued and skip projects with positive Net Present Value (NPV) when undervalued. Underinvestment problems can be avoided through the issuance of low-risk securities, namely debt, which is equity, such as the Pecking Order Theory (POT) (Myers & Majluf, 1984) . In fact, in-place assets are dynamic rather than static over the intertemporal period (Drobetz et al., 2015; Halov, 2006; Klein et al., 2002; Lang et al., 1996) , so their volatility is a producer of information asymmetry. In contrast to POT, if the volatility of assets in place has low information asymmetry content, then they prefer to issue equity rather than debt (Fulghieri et al., 2020) .

The implication is that volatility in assets in place produces deviations from the target leverage. Graham & Harvey (2001) reports that 81%

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of companies have a target debt ratio. Among others, companies are moving towards a targeted debt ratio. When volatility only negatively impacts information asymmetry, managers prefer equity issuance. In turn, target leverage exceeds actual leverage (underleverage), following the proposition (Fulghieri et al., 2020) . In contrast, the funding hierarchy in POT explains that assets in place have intrinsic value that contains more asymmetric information. As a result, the company issues debt rather than equity which is sensitive to information, resulting in actual leverage exceeding the target leverage (overleverage).

Our research is motivated by the effectiveness of open disclosure regulations in the capital market (Financial Services Authority, 2020) against asymmetric information. We simplify the Pecking (Dis)order Theory (PDT) model (Fulghieri et al., 2020) by eliminating growth opportunities because they are not different from the POT hierarchy (Myers & Majluf, 1984) . We use growth opportunities and tangible assets as control variables to eliminate the effect of spurious regression. The research objective is to determine (1) the trend of leverage deviation, whether following POT or PDT (2) how the impact of asset in place volatility on leverage deviation.

The POT and PDT propositions are based on the assumption of different information asymmetry. PDT rejects the assumption of in-place asset volatility as a producer of information asymmetry. The POT assumption explains that when outside investors do not know the company's intrinsic value as an asset in place, the securities issued by type H (high-quality) companies are undervalued. We will discuss information asymmetry propositions first, then POT, and PDT.

Paper (Akerlof, 1970) analogizes information asymmetry in the used-car market. The case study (Bloch & Caillaud, 2017) has analogized numerically with the following notation: There are 2 types of used cars, namely H-quality or plum and L-quality or lemon. Half the cars traded were plums, and the rest were lemons. Plums and lemons are more valuable to buyers than sellers, according to the hypothetical data in table 1.

Table 1. Market in Perfect Information

Quality	%	Buyer's value (Vq)	Seller's value (Rq)
High (Plums)	λ	50 (V H)	40 (R H)
Low (Lemon)	1-λ	30 (V L)	25 (R L)

The assumption of perfect information causes buyers to be able to distinguish the quality of used cars, so the market price of plums is 45 ((VH+RH)/2) and 27.5 ((VL+RL)/2) for lemons. The market price of plums or lemons exceeds the seller's value, so the expected seller surplus (ESS) is 0.5*5+0.5*2.5=3.75, and buyers pay less, so the expected buyers surplus (EBS) is 0.5*5+0.5*2.5= 3.75. . The total gain to trade (GTT) is 7 which comes from plums, 5 and 2.5 from lemons, then 3.75 (50%) is enjoyed by buyers and the rest are sellers. As a result, the market becomes efficient because all goods of all qualities are transferred from the seller to the buyer

In contrast, asymmetric information causes buyers to think that the product being sold is homogeneous, so the expected value of the car for buyers is 40 (0.5*50+0.5*30) regardless of lemons or plums. No plum is willing to pay if the RH exceeds the buyer's expectations. In turn, the only lemons traded in the market and earned by ESS are 2.5 (0.5*5+0.5*0) and 2.5 for EBS. There was a decrease in the trade surplus from 7.5 to 5 due to changes in perfect information to asymmetric information. The notation is the number of lemons traded, and plums are 1-, so the buyer's expectation is

$$EV^B=(1-\lambda)*50+\lambda*30<40$$
$$EV^B=50-20\lambda<40;\ \lambda>0.50$$

The result is that more than 50% of used cars are lemons, preventing plums from entering the market since buyers can't tell the quality. When buyers' expectations increase, it results in a greater increase in sales of lemons because they are considered plums.

Spiegel (2019) numerically explains the pecking order theory hypothesis (Myers & Majluf, 1984). The presence of information asymmetry, producing companies with high intrinsic value when issuing securities, can experience undervalued, and vice versa. Issuance of securities is carried out if the welfare of an entrepreneur is greater when investing (W(I) than not investing (W(NI)), or when return on investment, R exceeds the cost of investment from outside investors, I, and t is the current period.

$$W_t(I)-W_t(NI) = (X_t+R)-(I(X_t+R))/(X\hat{}+R)-X_t$$
$$W_t(I)-W_t(NI) = R-I((X_t+R))/(X\hat{}+R)$$

If p is a probability, p, is a company with L type and 1-p is an H type, then information asymmetry causes an L-type company to be considered an H type (p is close to 0). In turn, the equation X ̂=p(X_L)+(1-p)(X_H)causes I to be smaller than 1. In other words, investment participation by outside investors through the issuance of securities is overvalued, which in turn will reduce the cost of investment. As a result, the difference between R and I is greater than full information, resulting in increased welfare for entrepreneurs in type L companies to issue securities. In contrast, when a type H company issues securities that are undervalued. There is an increase in the investment cost, further reducing the difference between R and I. Obviously, the securities of type L companies do not distort their investment decisions because they are believed to be type H companies to prevent investment because the securities are undervalued. Therefore (Myers & Majluf, 1984) suggest that when companies invest, it is better to avoid securities that are not sensitive to asymmetric information, starting with internal funding, then debt, which in turn is issuing equity.

In contrast, the pecking (dis)order theory proposition uses firm size and asset growth as producers of asymmetric information. If information asymmetry is inherent in firm size (compared to growth opportunities), then the issuance of securities such as equity is more optimal. On the other hand, when asymmetric information is found in growth opportunities, debt issuance is prioritized (Fulghieri et al., 2020) . The volatility of assets in place only has an impact on the low information asymmetry so that companies prefer to issue more equity than debt. As a result, debt as actual leverage is lower than the target leverage or is called underleveraged.

The implementation of regulations on open disclosure (Financial Services Authority, 2020; Financial Services Authority No 13, 2015) results in low information asymmetry, so PDT is more applicable than POT. In contrast, when debt capacity is too high (debt overhang), the company misses investment opportunities with a positive NPV (Myers, 1977) . Therefore, we hypothesize that a debt overhang causes companies to miss growth opportunities. Without a debt overhang and low information asymmetry, the company prefers the issuance of equity over debt, then underleverage (PDT) occurs. In contrast, without a debt overhang and the high asymmetry of information in assets in place, the company prefers debt issuance over equity, then overleverage (POT) occurs.

METHOD

We use 504 pooled data from manufacturing companies listed on the Indonesia Stock Exchange for the period 2009 to 2020. First, we analyze the target leverage, which has a debt-asset ratio (Lev*it) proxy (Berg & Demarzo, 2017) , the explanatory variable is the company's quality. namely firm size with a total asset (SIZE) proxy (Halov, 2006; Rajan & Zingales, 1996)

$$Lev\_(i,t)^{*} = \beta\_0 + \beta\_1 SIZE\_t + \beta\_2 GROWTH\_t + \beta\_3 TANG\_t + \varepsilon\_(i,t)$$

We use tangible assets (TANG) and growth sales as control variables, because they can be spurious in the model. G rowth assets for growth (GROWTH) (Dang et al., 2018; Lang et al., 1996) . When the collateral assets and their growth can be used as collateral, the company does not need to issue equity, even though the level of information asymmetry is low. If Lev_(i,t)>Lev_(i,t)^*, is called overleverage (OL), and underleverage for Lev_(i,t)<Lev_(i,t)^*. For the deviation we use the equation for the difference between the target leverage and the actual leverage, Lev_(i,t).

$$Deviation\_(i,t) = Lev\_(i,t) - Lev\_(i,t)^{*}$$

RESULTS AND DISCUSSION

Table 2, Panel A has found that 504 units of observation experienced leverage deviation, namely 267 units of observation were overleveraged and the rest were underleveraged. Based on (Berg & Demarzo, 2017) , we categorize UL-type companies with the potential for debt overhang. We use the standard deviation as volatility in assets in place, as a producer of information asymmetry. Underleverage (UL) type companies have a higher average debt ratio, information asymmetry, and assets in place than overleverage (OL) type companies.

Table 2. Descriptive and Regression Analysis

	OL-Firm (Mean of debt ratio is 0.256)				UL-Firm (Mean of debt ratio is 0.640)			
Panel A	N-Obs	Size	Growth	Tangible	N-Obs	Size	Growth	Tangible
mean	267	27,886	0.102	0.258	237	28,877	0.107	0.419
Std Dev	267	1,587	0.123	0.155	237	1998	0.234	0.190
median	267	27,703	0.089	0.235	237	28,414	0.082	0.418
Skewness	267	0.431	1,664	0.584	237	0.465	1.171	0.146
Kurtosis	267	-0.665	6,996	-0.290	237	-0.408	8.123	-0.862

Penal B: Dependent: Deviation Leverage			
	OL-Firm	UL-Firm	All Firm
Intercept	0.653*	-2,823*	-0.177
SIZE	-0.009*	0.082*	0.013
GROWTH	-0.027	0.015	0.041
pliers	-0.566*	0.411*	-0.609*
F test	88,936*	16,355*	13,681*
R Square	0.503	0.173	0.076

Panel B explains that leverage deviation is determined by size, but the impact of firm size on leverage deviation explains non-linear form. A UL-type company, when debt overhangs (Myers, 1977) with an average debt ratio of 0.640, along with high information asymmetry in assets in place, the company issues equity and reduces debt issuance.

In contrast, the manager issues equity in the OL type without a debt overhang (mean is 0.256) and low information asymmetry in assets in place. When the company has more assets in place, greater debt capacity, and information asymmetry, the resulting deviation of actual leverage is smaller than the target leverage, and vice versa.

Thus, it is found that there are differences in the effect of information asymmetry on the adverse selection problem. Paper (Fulghieri et al., 2020) which explains the differences in information asymmetry due to variations in asset volatility in place, we add a variable debt overhang or excessive debt capacity. Intuitively, in the interests of shareholders, managers have the incentive to accept projects with positive NPV, if the resulting cashflow exceeds the investment cost. However, in the presence of risky debt or debt overhang (Myers, 1977) , managers act otherwise; that is, they are better off skipping the project. Because the project generates greater wealth to debtholders than managers and shareholders. In fact, companies avoid the debtoverhang problem, which is to take advantage of available growth opportunities, but take advantage of different funding sources.

Panel B, finds differences in the sign of firm size regression to deviation, due to differences in outside investors in information asymmetry in firm size volatility. We enrich the model (Akerlof, 1970) with (Fulghieri et al., 2020) , from information asymmetry and symmetry conditions to more or less information asymmetry levels. Which, in turn, influences the capital structure decision, whether the actual leverage is more or less than the target leverage.

Flannery & Rangan (2006) recognized the semifinal paper (Myers & Majluf, 1984) from the perspective of the pecking order theory. They explained that if the company conveying intrinsic value to outside investors is too impossible or costly, it is better to skip projects with positive NPV. In turn, companies can use financing sources that are not sensitive to information sensitivity, namely internal funding or risky debt rather than equity. POT is convincing when equity issuance is avoided when information asymmetry occurs because it is considered mispricing.

We find that OL-type firms with lower information asymmetry than UL-type firms tend to have low leverage deviations. In other words, supporting POT is the use of debt (actual debt) following the target debt, assuming the level of debt is relatively low or not yet at risk. On the other hand, UL-type companies, with higher information asymmetry than OL, are more likely to issue equity, so the deviation in actual leverage is greater than the target leverage or supports PDT. Obviously, we find a non-linear shape and manufacturing companies in Indonesia are not

in line with the debt overhang. They continue to take advantage of growth opportunities even with different funding perspectives.

This fact explains that companies make the financing hierarchy not as rigid as POT, can vary in intertemporal (Halov, 2006), and adjust the market value of securities (Baker & Wurgler, 2002) . If the company rigidly follows the pecking order, the resulting capital structure will not be optimal. Fundamentally, the volatility of a firm's assets in place can undermine historical patterns, and invalidating past data can reduce the ability of outside investors to set securities prices at true values. As a result, the adverse selection problem is dynamic, depending on the perspective of outside investors. Our results depend on the debt sensitivity of outside investors from that of the company's issued. Since debt becomes riskier in UL, the volatility of in-place assets is not a determinant of information asymmetry. Evidently, the leverage deviation becomes larger, and they issue equity. In turn, companies do not need corrective action due to mispricing due to adverse selection (Aflatooni & Khazaei, 2020) due to the different perceptions of outside investors in information asymmetry producers.

CONCLUSION

Difference level information asymmetry from The volatility of assets in place affects the adverse selection problem varies , depending on capacity debt company . Companies with more actual leverage a little compared to target leverage, called UL type , characterized by assets in place with debt ratio and information asymmetry more big compared to OL type . Company type OL is the actual leverage exceeds the target leverage.

We have find that POTS hierarchy no set by rigid in policy the company 's capital structure . UL type companies follow PDT proposition that is volatility in assets in place generates low information asymmetry , then publish equity . In turn, actual leverage is not the target leverage. Different company types of OL follow hierarchy funding from POTS. Although the level of information asymmetry is more low from the UL type, more choose debt with sensitivity lower than equity. As a result, the actual leverage exceeds the target leverage.

Table 2 explains we have using pooled data, so that no analyzing dynamic models in capital structure through time series or data panels. Dynamic models (Hello, 2006) test debt issuance in period 1, and so on about the choice of debt or equity in the funding company in period 2. It is possible debt and equity funding this conducted alternately in intertemporal. We left the analysis explicit about issues important to this study upcoming.

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