Firm-Specific Determinants on Leverages across Sectors in Indonesian Listed Companies

[1]Satriyo Budi Cahyono and [2]Arvinder Singh Chawla

[1]Reserach Scholar, [2]Professor of Finance
[1]School of Management Studies,
[1]Punjabi University Patiala, Punjab, India

Abstract: The study "Firm-Specific Determinants on Leverages across sectors in Indonesian Listed Companies" analyzes the influence of firm-level determinants on the leverages of the firms listed on the Indonesian Stock Exchange (IDX). By making use of unbalance panel dataset sample, we found that firm-level of determinants aptly explains the three types of leverage measurements viz. total leverage, short-term leverage, and long-term leverage. By using full sample data, it was found that firm-level determinants explain those leverages to be approximately 71.24%, 62.78%, and 65.50% respectively. This study also further analyses the influence of these covariates on financial structure across sectors. This study shows that sign and magnitude of association those determinants vary across sectors, which implies that sectoral behavior indirectly influences borrowing policy which should be considered by the firm's managers.

Index Terms **- capital structure, sector, determinants, Indonesia**

I. INTRODUCTION

Number of past literatures of capital structure studies provide evidence on leverage diversity amongst sectors and commonality within an industry, such as (Bowen, Daley, & Huber, 1982; Bradley, Jarrell, & Han Kim, 1984; Hamada, 1972; Jalilvand & Harris, 1984). According to (Ferri & Jones, 1979), the similarity is caused by several factors, such as: technology, products, skilled labors and material costs which drive similar level of business risks. Moreover, (Brander & Lewis, 1986) suggested other industry-related factors, such as: research & development, price competition, quantity, and advertising, which contribute towards the variations of capital structures decision across sectors or industries.

According to (Kayo & Kimura, 2011), the large proportion of leverage variance is affected by the firm-specific determinants which imply that firm fundamental characteristics should be accounted for a significant portion of financial structure decisions. Moreover, they suggested the industry characteristics analysis is crucial to explain leverage heterogeneity across firms. Several past studies (Aggarwal, 1981, 1990; Correa, Basso, & Nakamura, 2007; Ferri & Jones, 1979; Mohamad, 1995; Nassir & Mohamad, 1993) documented that industry classification plays an important role in firm's financial structure determination. Nevertheless, these studies put little attention on the differential effects of each sector on financial structure decision. In other words, there is sectoral behavior diversity which may indirectly influence the variety of associations between leverage and determinants. Therefore, this study analyzes impact determinants on financial structures across sectors among Indonesian firms.

The study objectives consist of two folds viz. firstly, to investigate how the impacts of firm-specific determinants on three leverage measurement across eight sectors in the context of an emerging market, like Indonesia. Secondly, to find empirical evidence whether the association between leverages and determinants may confirm prominent capital structure theories.

II. LITERATURE REVIEW

1. Capital Structure Theories

The born of prominent capital structure theories marked with (Modigliani & Miller, 1958) proportion which argued in a perfect capital market, a firm could not change its value by changing the proportion of its capital structure. However, in fact, those assumptions are unrealistic due to the presence of transaction costs, corporate tax, dividends, and informational asymmetries, etc. Subsequently, (Modigliani & Miller, 1963) found that tax-shield on debt utilization may reduce costs of debt which indirectly increases firm value. After that, the modern theories were emerged to describe the firm's financing patterns.

1.1 Pecking Order Theory (POT)

A survey conducted by (Donaldson, 1961) in the 25 large US firms concluded that managements prefer to use internal funds when available, instead of external resources. Subsequently, (Myers, 1984; Myers & Majluf, 1984) furnished a model to justify the Donaldson's findings and constructed the asymmetric information theory. Asymmetric information proposes that insiders (managers) have private information which are unknown by outsiders (investors). If managers perceive the market undervalues their share, they hesitate to make equity issuance. In another side, investors also aware that managers reluctant to issue new equity as the market underprices their share. Consequently, both parties react differently using the information provided by them. If the new investments are funded by issuing equity, underpricing problems drive net loss to the existing shareholders. In this condition, internal resources and debt would be favorable than equity financing.

1.2 Trade-Off Theory (TOT)

(Kraus & Litzenberger, 1973) constructed a model of optimal leverage which proposes the tax benefits on debt usage could be offset by the debt-related costs, such as financial distress, bankruptcy, and agency costs. As reported by (Kim, 1978), the trade-off theory implies an optimal financial structure can be reached by balancing these costs and benefits from debt utilization.

1.3 Agency Theory (AT)

(Jensen & Meckling, 1976) proposed a theory that debt is to be considered as a necessary factor to discipline managers. They revealed the relationship of agency emerged as principals (shareholders) delegate authorities to agents (managers) to act on the shareholder's behalf. Sometimes, managers do not conduct according to shareholder's interests which is far from firm value maximization. Moreover, they proposed given increasing agency costs between debtholders and shareholders, an optimum mix of debt and equity could diminish total agency costs.

2. Determinants of capital structure

2.1 Firm Size

According to TOT, as the size of firm become larger, they have a lower default risk, lower probability of bankruptcy and lower cost of debt than that of small firms, due to more stable cash flow and more diversified entity (Chen & Strange, 2005; Deesomsak, Paudyal, & Pescetto, 2004; Elsas & Florysiak, 2008; Nagano, 2003; Song, 2005). Therefore the relationship between company size and level of leverage is positive. In other sides, POT proposes the larger firms get more access on equity financing through the capital market at lower issuance costs, due to lesser information asymmetry (Smith & Warner, 1979). Thus, the association between firm size and leverage is negative.

2.2 Growth opportunity

Based on POT, the higher growth opportunity firms are prone to be higher asymmetric information. Thus, firms prefer to use more leverage to suppress their informational asymmetry (Song, 2005). Hence, this variable is positively associated with debt ratio. According to AT perspective, the firms with excellent growth opportunity tend to possess greater agency costs which lead to costly debt prices. Consequently, these firms would maintain a low debt to avoid agreement's constraints dictated by lenders in order to reach maximal gains (Jensen & Meckling, 1976). Thus, a negative relationship is predicted between growth opportunities and leverage.

2.3 Profitability

POT explains that the higher profitability firms should have greater internal sources from their accumulated earnings, so their dependency on external sources could be lesser (Schoubben & Hulle, 2004). Thus, POT predicts profitability negatively effects on leverage. Meanwhile, TOT proposed that higher profitable companies might get more tax shield advantages (Pettit & Singer, 1985). As a result, the association between profitability and debt ratio would be positive. Based on AT argument, the profitable firms favor to utilize debt financing to discipline managers; thus, they prefer to distribute their earnings than utilize them for re-investment purposes (Jensen & Meckling, 1976). So, profitability is positively associated with leverage.

2.4 Tangibility

As TOT suggestion, the firm's fixed assets could be used as collateral when borrowing funds; so, these might increase firm's debt capacity beside reducing the costs of financial distress (Elsas & Florysiak, 2008). Therefore the association between tangibility and debt is positive. However, POT argues as a firm has more tangible assets, their informational asymmetry issues become lower due to the easiness in firm's valuation. Thus, these firms may reduce their dependency on leverage when the level of tangible assets get stronger (Schoubben & Hulle, 2004). Thus, the relationship between tangibility and leverage is negative.

2.5 Liquidity

POT suggests firms prefer to use internal sources first instead of external financing; thus highly liquidity firms are prone to borrow less (Deesomsak et al., 2004). Hence, liquidity is supposed to be negatively associated with leverage. Based on TOT, the firms with high liquidity level tend to consume more leverage to fulfill their short-term obligations (Martin & Scott Jr., 1974); thus, liquidity should be a positively correlated with leverage.

2.6 Business risk

In accordance with TOT, as the firms' business risk increase, their probability of financial distress become higher due to future earnings uncertainty which leads interest payment insufficiency and bankruptcy; thus, the debt becomes costly which force firms to reduce their leverage (Krishnan & Moyer, 1997). Also, AT suggests that firms should reduce their debt consumption as their earnings are more volatile which drive insufficient cash flows to fulfill their obligations (Harris & Raviv, 1991). Similarly, POT argues as the firm's earning become volatile; they tend to accumulate their surplus to avoid losing investment opportunities whenever deficits occur (Myers, 2001). Thus, these theories predict a negative influence of firm risk on leverage.

III. METHODOLOGY

1. Data and sample

This study analyzes the firm's financing behavior across sectors in Indonesian listed companies. Sources of data are primarily taken from Thomson Reuters (TR) Eikon as well as the Fact Book and Directory of Indonesian Capital Market (IDX). The sample firms consist of all companies listed in IDX, except for banking and financial firms, during 12 years from 2005 to 2016. The firms are classified into 8 sectors according to JASICA (Jakarta Stock Industrial Classification). Based on unbalance panel dataset, the initial sample includes 534 firms; then after dropping incomplete element of data, as many as 419 firms were chosen as the sample with observation number of 3,425 frim-years.

2. Variable definition

The dependent variables and covariates used in this study are defined in table 1 as follow:

Table 1 – Variable definition

Variables		Formulation
Dependent Variable		
TDMV	Total Leverage	Total debt over total firm value, In which total firm value equals to total debt plus market value of firm equity
LDMV	Long-term Leverage	Long-term debt over total firm value
SDMV	Short-term Leverage	Short-term debt over total firm value
Independent variable		
SIZE	Firm' size	Natural logarithm of sales
GROW	Growth opportunity	Firm market value over total assets
PROF	Profitability	Net Operating Income over total assets
TANG	Tangibility	Property & Plant Assets over total assets
LIQU	Liquidity	Current Assets over Current Liability
RISK	Earning Volatility	Volatility of (EBIT over total assets)

3. Empirical Model

This study analyzes the relationship between firm leverages and determinants using unbalance panel data set. The dependent variables are measured in three leverage measurement viz. total, long-term, and short-term leverage. Meanwhile, the determinants are related to the firm-level variables which include: size, growth, profitability, asset structure, liquidity, and earnings volatility. According to (Gujarati, Porter, & Gunasekar, 2012), paned data could be analyzed by 3 methods, viz. Pooled OLS (PLS), Fixed effect (FEM), and Random Effect (REM) as follows:-

3.1 Pooled Ordinary Least Square (PLS)

In the PLS model, it simply pools all observations and estimates a grand regression without considering cross-section or time series nature of data. This model is also known as Constant Coefficient Model (CCM). The relationship between leverage and determinants using PLS model can be described as follow:

$$MDR_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 GROW_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \beta_5 LIQU_{it} + \beta_6 RISK_{it} + u_{it} \quad (1)$$

Where:

MDR_{it} = market debt-ratio (TDMV, LDMV, and SDMV for total, long-term, and short-term leverage respectively); α = common intercept; $SIZE_{it}$ = firm's size; $GROW_{it}$ = growth opportunity; $PROF_{it}$ = profitability; $TANG_{it}$ = tangibility; $LIQU_{it}$ = liquidity; $RISK_{it}$ = business risk; u_{it}= error term to be assumed independently and identically distributed with zero mean and constant variance or ~iid(0,σ_u^2)

3.2 Fixed Effect Model (FEM)

FEM allows each cross-section unit to have its own intercept (α_i) by employing dummy variable or be known as Least Square Dummy Variable (LSDV) model. Relationship between leverage and determinants using FEM is follow:

$$MDR_{it} = \alpha_i + \beta_1 SIZE_{it} + \beta_2 GROW_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \beta_5 LIQU_{it} + \beta_6 RISK_{it} + u_{it} \quad (2)$$

Where:

MDR_{it} = market debt-ratio (TDMV, LDMV, and SDMV for total, long-term, and short-term leverage respectively); α_i = = individual intercept; $SIZE_{it}$ = firm's size; $GROW_{it}$ = growth opportunity; $PROF_{it}$ = profitability; $TANG_{it}$ = tangibility; $LIQU_{it}$ = liquidity; $RISK_{it}$ = business risk; u_{it}= error term to be assumed independently and identically distributed with zero mean and constant variance or ~iid(0,σ_u^2)

3.3 Random Effect Model (REM)

Unlike the LSDV model, REM allows each cross-section unit to its own (fixed) intercept value, which is assumed that intercept values are a random drawing from a much bigger population of individuals. According to (Gujarati et al., 2012), the basic idea of REM is that individual intercept (α_i) as in FEM to be assumed as random variable with mean value of α (without subscript-i). Hence, individual intercept can be expressed as: $\alpha_i = (\alpha + \varepsilon_i)$, where ε_i is a random error term with a mean value of zero and a variance of σ_ε^2. Therefore, this model is also known as Error Component Model (ECM). Using REM, the relationship between leverage and determinants is follow:

$$MDR_{it} = \alpha_i + \beta_1 SIZE_{it} + \beta_2 GROW_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \beta_5 LIQU_{it} + \beta_6 RISK_{it} + u_{it} \quad \text{or}$$
$$MDR_{it} = \alpha + \varepsilon_i + \beta_1 SIZE_{it} + \beta_2 GROW_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \beta_5 LIQU_{it} + \beta_6 RISK_{it} + u_{it} \quad \text{or}$$
$$MDR_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 GROW_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \beta_5 LIQU_{it} + \beta_6 RISK_{it} + \varepsilon_i + u_{it} \quad \text{or}$$
$$MDR_{it} = \alpha + \beta_1 SIZE_{it} + \beta_2 GROW_{it} + \beta_3 PROF_{it} + \beta_4 TANG_{it} + \beta_5 LIQU_{it} + \beta_6 RISK_{it} + w_{it} \quad (3)$$

Where:

MDR_{it} = market debt-ratio (TDMV, LDMV, and SDMV for total, long-term, and short-term leverage respectively); α = common intercept; α_i = individual intercept; $SIZE_{it}$ = firm's size; $GROW_{it}$ = growth opportunity; $PROF_{it}$ = profitability; $TANG_{it}$ = tangibility; $LIQU_{it}$ = liquidity; $RISK_{it}$ = business risk; u_{it}= error term to be assumed independently and identically distributed with zero mean and constant variance or ~iid(0,σ_u^2); w_{it} = ($\varepsilon_i + u_{it}$) = composite error term which consists of two components, i.e. the cross-section or individual specific error component (ε_i) and idiosyncratic term which combine time series and cross-section error component (u_{it})

4. Model Selection

There are three tests that can be used to choose the data panel regression model (PLS, FEM, or REM) based on the characteristics of data possessed, viz. Chow Test, Breusch-Pagan test, and Hausman Test (Correlated Random Effects) as follow:-

4.1 Chow test for Redundant Fixed Effect - Likelihood Ratio

This test is used to select the preferred model between FEM and PLS. This method is employed for testing the joint significance of those dummies by performing an F-test proposed by (Chow, 1960) with restricted residual sums of squares (RRSS) being of PLS and unrestricted residual sums of squares (URSS) being of FEM. If Chow test is statistically significant, FEM is favorable than PLS.

4.2 Breusch-Pagan test for Lagrange Multiplier Test

This test is used to select the preferred model between REM and PLS. This method is employed for testing the existence of cross-sectional and time effect is important in panel setting regression. The LM tests are derived under the assumption that the unobserved individual effects are distributed as independent, the unobservable time effects are independent, and the idiosyncratic disturbances are independent. The null hypotheses to be tested are no individual effects, no time effects; and no individual and time effects (Breusch & Pagan, 1980). If the Breusch-Pagan test is statistically significant, REM is preferable than PLS.

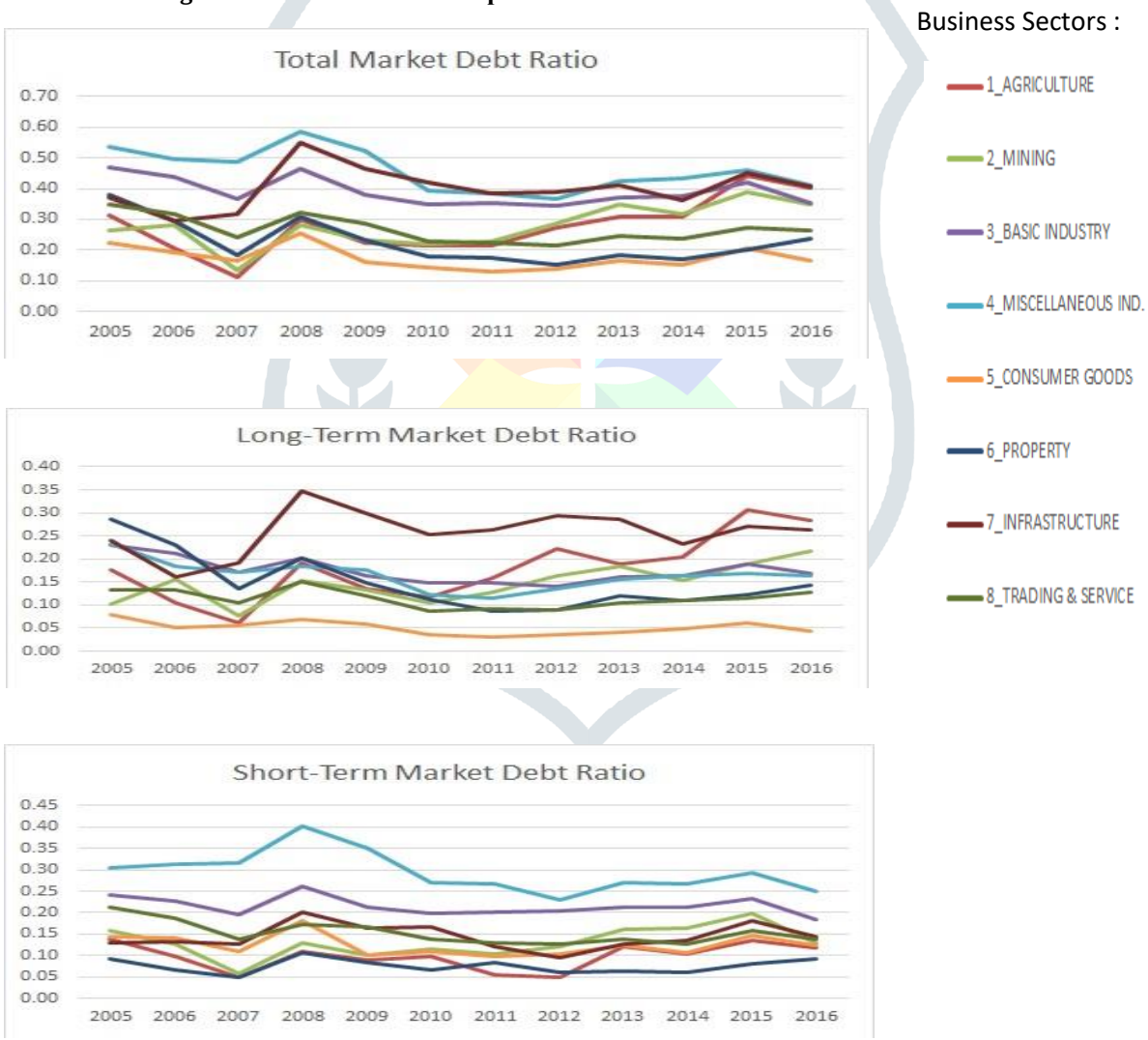
4.3 Hausman Test for Correlated Random Effects

This test is used to select the preferred model between REM and FEM. In (Hausman, 1978) test, the fixed and random effects estimations are compared under the null hypothesis is there is no significant difference in coefficient parameters between both models (FEM and REM). If the Hausman test is statistically significant, FEM is preferred than REM.

IV. Results and Discussions

1. Evolution of Leverage across sectors

Figure 1 – Trend of Firm's Capital Structure across Sectors from 2005 to 2016



Source: Thomson Reuter Eikon (processed by authors)

From figure-1, it is obvious that capital structures vary across sectors. The firms operating in Miscellaneous Industry have a relatively higher proportion of total and short-term debt ratio compare to other sectors firms, while the Infrastructure sector firms show a greater proportion of long-term leverage compare to firms in other sectors. The firms operated in consumer goods industry utilize less total and long-term debt ratio than other sectors firms, while the sector of property companies consumes few short-term leverages than companies in other sectors.

In general, all firms listed in IDX experienced debt-ratio shocks during 2007-2008 in three market leverage measurements above. This fluctuation was probably caused by the global crisis happened in 2008 which lead capital inflow from abroad market into IDX

market. As we know that during this crisis, the IDX market was relatively stable compared to other markets in developed countries. Hence, realistic investors would put their money in safer investments, like in IDX market.

2. Descriptive statistics

The descriptive statistics of the data sample can be seen in table 2 as follow:

Table 2 – Descriptive Statistics

Unbalance Panel		Sub Sample (Sector)								Full Sample
		AGRI	MINI	BASI	MISC	CONS	PROP	INFR	TRAD	
No. Firms		21	43	61	37	35	55	52	115	419
No. Obs.		169	350	508	342	332	473	369	882	3,425
Dependent variables										
TDMV	Mean	0.278	0.277	0.379	0.446	0.167	0.218	0.402	0.256	0.298
	S.D.	0.246	0.268	0.307	0.290	0.194	0.193	0.255	0.237	0.265
LDMV	Mean	0.184	0.148	0.159	0.169	0.051	0.142	0.265	0.112	0.147
	S.D.	0.198	0.193	0.217	0.202	0.099	0.165	0.204	0.147	0.185
SDMV	Mean	0.094	0.129	0.220	0.277	0.116	0.076	0.138	0.143	0.152
	S.D.	0.119	0.183	0.245	0.244	0.159	0.124	0.158	0.184	0.196
Independent variables										
SIZE	Mean	18.580	18.523	18.638	18.898	18.971	17.831	18.332	18.017	18.377
	S.D.	1.970	2.389	1.654	1.395	1.744	1.690	2.128	2.159	1.974
GROW	Mean	2.490	1.674	1.136	0.906	2.405	1.024	1.595	1.502	1.486
	S.D.	4.596	2.324	1.835	0.633	3.100	0.743	2.342	2.021	2.234
PROF	Mean	0.084	0.071	0.067	0.052	0.146	0.060	0.036	0.041	0.063
	S.D.	0.126	0.160	0.096	0.084	0.182	0.078	0.223	0.382	0.231
TANG	Mean	0.681	0.646	0.809	0.829	0.541	0.263	1.016	0.575	0.649
	S.D.	0.280	0.408	0.387	0.589	0.237	0.253	1.148	0.890	0.694
LIQU	Mean	7.007	3.739	2.358	1.531	2.864	2.636	1.920	3.434	2.963
	S.D.	37.604	10.163	3.971	0.940	2.191	3.598	5.723	12.978	11.522
RISK	Mean	0.003	0.005	0.002	0.001	0.005	0.001	0.030	0.056	0.019
	S.D.	0.012	0.012	0.005	0.003	0.022	0.007	0.246	1.081	0.555

Source: Thomson Reuter Eikon (processed by authors)

3. Results of regressions

Regression results of relationship between three leverage measurements, viz. total debt (TDMV), long-term debt (LDMV) and short-term debt (SDMV) and determinants across sectors using three methods of panel data analysis, i.e., Pooled OLS (PLS), Fixed Effect (FEM), and Random Effect (REM) as in table 3, table 4, and table 5 respectively.

Table 3 – Regression results of Leverages on Determinants based on Pooled Ordinary Least Square (PLS) analysis

DEPENDENT VARIABLE : TOTAL MARKET LEVERAGE (TDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Variable	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]
C	-0.035 [0.394]	-0.447 [0.020]**	-0.003 [0.977]	-0.309 [0.017]**	0.8890 [0]***	0.6140 [0]***	-0.171 [0.075]*	0.3595 [0.001]***	0.0888 [0.194]
?_SIZE	0.0201 [0]***	0.0464 [0]***	0.0185 [0.006]***	0.0449 [0]***	-0.010 [0.257]	-0.013 [0.022]**	0.0269 [0]***	0.0056 [0.329]	0.0134 [0.000]***
?_GROW	-0.035 [0]***	-0.014 [0.000]***	-0.031 [0]***	-0.033 [0]***	-0.037 [0.099]*	-0.014 [0.000]***	-0.097 [0]***	-0.060 [0]***	-0.051 [0]***
?_PROF	-0.243 [0]***	-1.148 [0]***	-0.500 [0]***	-1.263 [0]***	-1.213 [0]***	-0.249 [0.000]***	-0.421 [0.000]***	-0.410 [0]***	0.0185 [0.552]
?_TANG	0.0607 [0]***	0.0054 [0.925]	0.0905 [0.005]***	0.0433 [0.151]	0.0136 [0.574]	-0.020 [0.601]	0.1300 [0.000]***	0.0683 [0]***	0.0110 [0.229]
?_LIQU	-0.002 [0]***	-0.000 [0.027]**	-0.005 [0]***	-0.018 [0]***	-0.103 [0]***	-0.039 [0]***	0.0008 [0.727]	-0.007 [0.000]***	-0.002 [0.000]***
?_RISK	-0.030 [0.003]***	-0.607 [0.623]	-2.564 [0.020]**	-9.826 [0]***	4.8432 [0.320]	-0.502 [0.222]	-1.308 [0.254]	-0.130 [0.005]***	0.0580 [0]***
R-squared	0.175	0.414	0.302	0.365	0.360	0.389	0.211	0.310	0.176
Adj. R-squared	0.174	0.393	0.289	0.358	0.349	0.378	0.201	0.298	0.170
SE of regression	0.241	0.192	0.226	0.246	0.234	0.153	0.173	0.213	0.216
F-statistic	121.175	19.100	24.686	48.071	31.416	34.473	20.780	27.077	31.168
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
DEPENDENT VARIABLE : LONG TERM MARKET LEVERAGE (LDMV)									
C	-0.186 [0]***	-0.053 [0.763]	-0.339 [0.000]***	-0.672 [0]***	-0.212 [0.152]	-0.180 [0.012]**	-0.151 [0.079]*	-0.062 [0.527]	-0.048 [0.278]
?_SIZE	0.0185 [0]***	0.0188 [0.050]*	0.0258 [0]***	0.0405 [0]***	0.0226 [0.004]***	0.0123 [0.000]***	0.0187 [0.000]***	0.0193 [0.000]***	0.0100 [0]***
?_GROW	-0.017 [0]***	-0.010 [0.002]***	-0.010 [0.008]***	-0.010 [0.021]**	-0.021 [0.240]	-0.007 [0.001]***	-0.063 [0]***	-0.032 [0]***	-0.021 [0]***
?_PROF	-0.102 [0]***	-0.596 [0]***	-0.257 [0.000]***	-0.505 [0]***	-0.789 [0]***	-0.062 [0.117]	-0.253 [0.009]***	-0.182 [0.000]***	0.0273 [0.180]
?_TANG	0.0416 [0]***	-0.042 [0.438]	0.0921 [0.000]***	0.1622 [0]***	-0.011 [0.556]	0.0785 [0.001]***	0.0723 [0.015]**	0.0379 [0.000]***	0.0207 [0.000]***
?_LIQU	-0.000 [0.040]**	-0.000 [0.081]*	-0.000 [0.360]	-0.001 [0.460]	0.0126 [0.303]	-0.005 [0.022]**	0.0080 [0.000]***	-0.002 [0.096]*	-0.000 [0.188]
?_RISK	-0.008 [0.269]	-0.576 [0.618]	-2.264 [0.006]***	-3.965 [0.014]**	2.7747 [0.487]	-0.213 [0.390]	-1.188 [0.247]	-0.052 [0.207]	0.0324 [0.000]***
R-squared	0.107	0.208	0.243	0.293	0.113	0.143	0.138	0.159	0.091
Adj. R-squared	0.105	0.179	0.230	0.284	0.097	0.128	0.127	0.145	0.085
SE of regression	0.175	0.180	0.169	0.183	0.192	0.093	0.155	0.189	0.140
F-statistic	68.276	7.100	18.388	34.566	7.131	9.073	12.427	11.386	14.571
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
DEPENDENT VARIABLE : SHORT TERM MARKET LEVERAGE (SDMV)									
C	0.1516 [0]***	-0.393 [0]***	0.3356 [0.000]***	0.3631 [0.001]***	1.1013 [0]***	0.7947 [0]***	-0.020 [0.754]	0.4216 [0]***	0.1372 [0.013]**
?_SIZE	0.0016 [0.346]	0.0276 [0]***	-0.007 [0.145]	0.0043 [0.496]	-0.033 [0]***	-0.025 [0]***	0.0081 [0.020]**	-0.013 [0.000]***	0.0033 [0.251]
?_GROW	-0.018 [0]***	-0.003 [0.037]**	-0.020 [0]***	-0.023 [0]***	-0.015 [0.420]	-0.006 [0.040]**	-0.034 [0]***	-0.027 [0]***	-0.030 [0]***
?_PROF	-0.141 [0]***	-0.552 [0]***	-0.243 [0.000]***	-0.758 [0]***	-0.424 [0.005]***	-0.187 [0.000]***	-0.167 [0.022]**	-0.228 [0]***	-0.008 [0.730]
?_TANG	0.0190 [0.000]***	0.0476 [0.099]*	-0.001 [0.946]	-0.118 [0]***	0.0253 [0.221]	-0.099 [0.002]***	0.0576 [0.010]**	0.0303 [0.000]***	-0.009 [0.192]
?_LIQU	-0.001 [0]***	-0.000 [0.241]	-0.004 [0]***	-0.016 [0]***	-0.115 [0]***	-0.033 [0]***	-0.007 [0]***	-0.005 [0.000]***	-0.001 [0.000]***
?_RISK	-0.021 [0.005]***	-0.030 [0.959]	-0.300 [0.712]	-5.861 [0.002]***	2.0685 [0.618]	-0.288 [0.398]	-0.119 [0.877]	-0.077 [0.010]**	0.0255 [0.010]**
R-squared	0.083	0.380	0.176	0.212	0.343	0.372	0.123	0.247	0.105
Adj. R-squared	0.082	0.357	0.162	0.203	0.332	0.361	0.112	0.234	0.099
SE of regression	0.188	0.095	0.167	0.218	0.199	0.127	0.116	0.138	0.175
F-statistic	51.856	16.569	12.245	22.509	29.192	32.133	10.879	19.759	17.081
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

Model-fit statistics are reported at the bottom of the table. P-values are *** Significant at 1% level, ** Significant at 5% level, * significant at 10% level

Table 4 - Regression results of Leverages on Determinants based on Fixed Effect Method (FEM)

DEPENDENT VARIABLE : TOTAL MARKET LEVERAGE (TDMV)

Variable	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]
C	0.1590 [0.036]**	-1.148 [0.001]***	0.1086 [0.548]	0.4288 [0.093]*	1.7465 [0.000]***	1.0756 [0.001]***	0.1548 [0.496]	-1.187 [0]***	0.0511 [0.694]
?_SIZE	0.0088 [0.030]**	0.0740 [0.000]***	0.0102 [0.311]	-0.001 [0.895]	-0.055 [0.020]**	-0.043 [0.011]**	0.0074 [0.561]	0.0872 [0]***	0.0133 [0.060]*
?_GROW	-0.019 [0]***	-0.005 [0.063]*	-0.020 [0]***	-0.022 [0]***	-0.077 [0.000]***	-0.001 [0.671]	-0.084 [0]***	-0.035 [0]***	-0.033 [0]***
?_PROF	-0.122 [0]***	-0.426 [0.001]***	-0.371 [0]***	-0.475 [0]***	-0.777 [0]***	-0.009 [0.888]	-0.665 [0.000]***	-0.324 [0]***	0.0001 [0.995]
?_TANG	0.0252 [0.000]***	0.1488 [0.011]**	0.0690 [0.109]	0.0649 [0.152]	-0.010 [0.725]	0.0197 [0.727]	0.1514 [0.005]***	0.0709 [0]***	0.0247 [0.006]***
?_LIQU	-0.000 [0.000]***	-0.000 [0.634]	-0.001 [0.236]	-0.004 [0.055]*	-0.089 [0]***	-0.029 [0]***	0.0061 [0.032]**	-0.005 [0.001]***	-0.000 [0.075]*
?_RISK	-0.021 [0.003]***	0.1702 [0.857]	-0.020 [0.983]	-1.405 [0.448]	0.3172 [0.931]	-0.402 [0.257]	0.0734 [0.939]	-0.123 [0.002]***	0.0280 [0.005]***
R-squared	0.712	0.796	0.655	0.812	0.794	0.706	0.624	0.653	0.659
Adj. R-squared	0.672	0.759	0.600	0.784	0.765	0.665	0.569	0.589	0.605
SE of regression	0.152	0.121	0.170	0.143	0.141	0.113	0.127	0.163	0.149
F-statistic	17.529	21.365	11.893	28.839	27.406	17.450	11.403	10.260	12.231
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
DEPENDENT VARIABLE : LONG TERM MARKET LEVERAGE (LDMV)									
C	0.0002 [0.997]	-0.642 [0.052]*	-0.215 [0.128]	-0.134 [0.576]	1.2840 [0.000]***	0.0689 [0.728]	0.1377 [0.525]	-0.626 [0.009]***	0.0626 [0.476]
?_SIZE	0.0083 [0.009]***	0.0392 [0.025]**	0.0182 [0.022]**	0.0148 [0.244]	-0.059 [0.003]***	-0.005 [0.589]	0.0005 [0.964]	0.0490 [0.000]***	0.0036 [0.449]
?_GROW	-0.010 [0]***	-0.004 [0.084]*	-0.007 [0.072]*	-0.007 [0.062]*	0.0051 [0.793]	-0.002 [0.442]	-0.052 [0]***	-0.016 [0.001]***	-0.017 [0]***
?_PROF	-0.022 [0.127]	0.0272 [0.817]	-0.119 [0.077]*	-0.109 [0.281]	-0.497 [0.000]***	0.0285 [0.487]	-0.437 [0.006]***	-0.065 [0.165]	0.0179 [0.250]
?_TANG	0.0140 [0.005]***	0.1442 [0.006]***	0.0754 [0.025]**	0.0420 [0.324]	-0.032 [0.226]	0.1208 [0.000]***	0.1693 [0.001]***	0.0275 [0.024]**	0.0148 [0.016]**
?_LIQU	-0.000 [0.362]	-0.000 [0.812]	0.0000 [0.967]	0.0007 [0.709]	0.0350 [0.001]***	0.0073 [0.019]**	0.0115 [0]***	-0.003 [0.015]**	-0.000 [0.959]
?_RISK	0.0104 [0.076]*	2.7482 [0.001]***	-0.522 [0.496]	-1.684 [0.334]	-0.489 [0.877]	0.1499 [0.475]	-0.557 [0.545]	0.0140 [0.697]	0.0288 [0]***
R-squared	0.628	0.741	0.590	0.666	0.687	0.603	0.534	0.571	0.595
Adj. R-squared	0.575	0.694	0.525	0.616	0.643	0.548	0.467	0.493	0.531
SE of regression	0.121	0.110	0.133	0.134	0.121	0.067	0.121	0.145	0.101
F-statistic	11.934	15.622	9.032	13.304	15.626	11.032	7.884	7.273	9.309
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***
DEPENDENT VARIABLE : SHORT TERM MARKET LEVERAGE (SDMV)									
C	0.1588 [0.009]***	-0.505 [0.028]**	0.3245 [0.022]**	0.5634 [0.019]**	0.4624 [0.618]	1.0067 [0.001]***	0.0170 [0.915]	-0.560 [0.001]***	-0.011 [0.917]
?_SIZE	0.0004 [0.890]	0.0347 [0.004]***	-0.007 [0.311]	-0.016 [0.191]	0.0040 [0.566]	-0.038 [0.018]**	0.0069 [0.447]	0.0382 [0.000]***	0.0097 [0.106]
?_GROW	-0.009 [0]***	-0.000 [0.641]	-0.013 [0.000]***	-0.014 [0.000]***	-0.082 [0.104]	0.0001 [0.973]	-0.031 [0.000]***	-0.018 [0]***	-0.015 [0.000]***
?_PROF	-0.100 [0]***	-0.453 [0]***	-0.252 [0.000]***	-0.365 [0.000]***	-0.280 [3.206]	-0.038 [0.554]	-0.227 [0.057]*	-0.258 [0]***	-0.017 [0.362]
?_TANG	0.0111 [0.027]**	0.0046 [0.899]	-0.006 [0.848]	0.0228 [0.591]	0.0212 [299.1]	-0.101 [0.055]*	-0.017 [0.640]	0.0434 [0]***	0.0099 [0.201]
?_LIQU	-0.000 [0.000]***	-0.000 [0.680]	-0.001 [0.118]	-0.004 [0.016]**	-0.124 [11.81]	-0.036 [0]***	-0.005 [0.008]***	-0.001 [0.126]	-0.000 [0.039]**
?_RISK	-0.031 [0]***	-2.577 [0]***	0.5018 [0.511]	0.2783 [0.873]	0.8069 [0]***	-0.551 [0.095]*	0.6314 [0.358]	-0.137 [0]***	-0.000 [0.928]
R-squared	0.655	0.649	0.549	0.738	0.803	0.619	0.537	0.615	0.596
Adj. R-squared	0.606	0.585	0.477	0.699	0.775	0.567	0.470	0.544	0.532
SE of regression	0.123	0.076	0.132	0.134	0.116	0.105	0.090	0.106	0.126
F-statistic	13.430	10.096	7.631	18.831	29.007	11.818	7.979	8.705	9.347
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

Model-fit statistics are reported at the bottom of the table. P-values are *** Significant at 1% level, ** Significant at 5% level, * significant at 10% level

Table 5 - Regression of Leverages on Determinants based on Random Effect Method (REM)

DEPENDENT VARIABLE : TOTAL MARKET LEVERAGE (TDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Variable	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]	Coef. [Prob.]
C	0.0612 [0.309]	-0.614 [0.015]**	0.0403 [0.780]	0.0131 [0.946]	1.2663 [0.000]***	0.8029 [0.000]***	0.0774 [0.610]	-0.204 [0.221]	0.0014 [0.987]
?_SIZE	0.0138 [0]***	0.0486 [0.000]***	0.0143 [0.076]*	0.0195 [0.063]*	-0.030 [0.083]*	-0.027 [0.008]***	0.0109 [0.192]	0.0347 [0.000]***	0.0161 [0.002]***
?_GROW	-0.022 [0]***	-0.006 [0.018]**	-0.023 [0]***	-0.022 [0]***	-0.075 [0.000]***	-0.006 [0.129]	-0.091 [0]***	-0.045 [0]***	-0.037 [0]***
?_PROF	-0.134 [0]***	-0.556 [0]***	-0.410 [0]***	-0.594 [0]***	-0.865 [0]***	-0.072 [0.262]	-0.347 [0.001]***	-0.326 [0]***	0.0050 [0.823]
?_TANG	0.0339 [0]***	0.1147 [0.034]**	0.0751 [0.042]**	0.0909 [0.016]**	0.0057 [0.838]	0.0128 [0.794]	0.1515 [0.000]***	0.0682 [0]***	0.0241 [0.005]***
?_LIQU	-0.001 [0]***	-0.000 [0.232]	-0.002 [0.035]**	-0.005 [0.007]***	-0.092 [0]***	-0.030 [0]***	0.0039 [0.134]	-0.006 [0.000]***	-0.000 [0.031]**
?_RISK	-0.021 [0.004]***	-0.201 [0.827]	-0.628 [0.503]	-2.730 [0.119]	1.0725 [0.764]	-0.447 [0.197]	-0.811 [0.379]	-0.140 [0.000]***	0.0345 [0.000]***
R-squared	0.080	0.240	0.194	0.152	0.280	0.174	0.167	0.259	0.102
Adj. R-squared	0.079	0.212	0.180	0.141	0.267	0.159	0.156	0.247	0.095
SE of regression	0.153	0.128	0.174	0.146	0.141	0.113	0.128	0.170	0.149
F-statistic	49.784	8.535	13.780	14.916	21.730	11.419	15.532	21.113	16.482
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

DEPENDENT VARIABLE : LONG TERM MARKET LEVERAGE (LDMV)

C	-0.086 [0.056]*	-0.180 [0.430]	-0.257 [0.024]**	-0.468 [0.003]***	0.4706 [0.083]*	-0.147 [0.239]	0.0151 [0.910]	-0.319 [0.037]**	-0.013 [0.838]
?_SIZE	0.0128 [0]***	0.0182 [0.132]	0.0205 [0.001]***	0.0296 [0.000]***	-0.015 [0.272]	0.0066 [0.295]	0.0074 [0.318]	0.0322 [0.000]***	0.0077 [0.029]**
?_GROW	-0.011 [0]***	-0.005 [0.036]**	-0.007 [0.037]**	-0.007 [0.056]*	-0.003 [0.828]	-0.003 [0.099]*	-0.058 [0]***	-0.022 [0]***	-0.018 [0]***
?_PROF	-0.031 [0.025]**	-0.092 [0.410]	-0.145 [0.023]**	-0.196 [0.037]**	-0.609 [0]***	0.0062 [0.871]	-0.239 [0.013]**	-0.084 [0.061]*	0.0196 [0.204]
?_TANG	0.0221 [0]***	0.1027 [0.037]**	0.0795 [0.006]***	0.1151 [0.000]***	-0.017 [0.475]	0.1198 [0.000]***	0.1330 [0.001]***	0.0317 [0.004]***	0.0174 [0.002]***
?_LIQU	-0.000 [0.261]	-0.000 [0.371]	-0.000 [0.814]	0.0002 [0.893]	0.0303 [0.003]***	0.0043 [0.124]	0.0099 [0.000]***	-0.003 [0.010]**	-0.000 [0.871]
?_RISK	0.0089 [0.122]	2.1031 [0.013]**	-0.913 [0.215]	-2.359 [0.137]	0.7383 [0.809]	0.0875 [0.670]	-1.084 [0.215]	-0.002 [0.936]	0.0302 [0]***
R-squared	0.036	0.099	0.124	0.071	0.091	0.058	0.118	0.122	0.058
Adj. R-squared	0.035	0.066	0.109	0.060	0.074	0.040	0.107	0.107	0.051
SE of regression	0.121	0.118	0.134	0.134	0.122	0.067	0.121	0.147	0.100
F-statistic	21.478	2.977	8.116	6.394	5.559	3.305	10.410	8.344	8.906
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

DEPENDENT VARIABLE : SHORT TERM MARKET LEVERAGE (SDMV)

C	0.1351 [0.004]***	-0.391 [0]***	0.2994 [0.007]***	0.3946 [0.029]**	0.7328 [0.007]***	0.9310 [0]***	0.0334 [0.745]	0.1769 [0.073]*	0.0177 [0.823]
?_SIZE	0.0017 [0.508]	0.0275 [0]***	-0.006 [0.310]	-0.005 [0.537]	-0.010 [0.459]	-0.033 [0.000]***	0.0052 [0.351]	-0.000 [0.885]	0.0083 [0.053]*
?_GROW	-0.010 [0]***	-0.002 [0.074]*	-0.015 [0]***	-0.015 [0]***	-0.072 [0]***	-0.003 [0.410]	-0.032 [0]***	-0.023 [0]***	-0.018 [0]***
?_PROF	-0.105 [0]***	-0.506 [0]***	-0.263 [0]***	-0.435 [0]***	-0.264 [0.033]**	-0.095 [0.104]	-0.097 [0.181]	-0.238 [0]***	-0.013 [0.470]
?_TANG	0.0134 [0.005]***	0.0372 [0.169]	-0.004 [0.871]	-0.005 [0.878]	0.0235 [0.312]	-0.107 [0.013]**	0.0142 [0.646]	0.0350 [0]***	0.0061 [0.390]
?_LIQU	-0.000 [0]***	-0.000 [0.290]	-0.002 [0.013]**	-0.006 [0.001]***	-0.123 [0]***	-0.034 [0]***	-0.006 [0.000]***	-0.002 [0.006]***	-0.000 [0.013]**
?_RISK	-0.030 [0]***	-1.038 [0.053]*	0.2936 [0.687]	-0.688 [0.674]	0.4161 [0.888]	-0.515 [0.107]	0.2157 [0.740]	-0.132 [0]***	0.0051 [0.529]
R-squared	0.045	0.320	0.125	0.093	0.359	0.230	0.071	0.214	0.054
Adj. R-squared	0.043	0.294	0.110	0.082	0.347	0.215	0.059	0.200	0.048
SE of regression	0.123	0.086	0.134	0.136	0.115	0.105	0.089	0.115	0.126
F-statistic	26.941	12.677	8.162	8.563	31.239	16.147	5.956	16.379	8.344
Prob.(F-statistics)	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***	0.000***

Model-fit statistics are reported at the bottom of the table. P-values are *** Significant at 1% level, ** Significant at 5% level, * significant at 10% level

4. Model section

4.1 Model selection between PLS and FEM

Result of Chow tests as in table 6 exhibits that Fixed Effect method (FEM) is preferred than Pooled OLS (PLS) to analyze panel data set for all leverage measurement, both in the overall sample and across sectors.

Table 6 – Result of Chow test for Redundant Fixed Effect - Likelihood Ratio

DEPENDENT VARIABLE : TOTAL MARKET LEVERAGE (TDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	3608.0	178.6	246.6	617.7	387.3	242.6	350.7	253.6	776.9
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Preferred Model	FEM	FEM	FEM	FEM	FEM	FEM	FEM	FEM	FEM

DEPENDENT VARIABLE : LONG-TERM MARKET LEVERAGE (LDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	2997.3	188.8	214.6	380.6	356.2	255.0	291.4	248.8	712.8
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Preferred Model	FEM	FEM	FEM	FEM	FEM	FEM	FEM	FEM	FEM

DEPENDENT VARIABLE : SHORT-TERM MARKET LEVERAGE (SDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	3346.0	96.0	210.7	559.4	411.7	165.7	302.7	247.4	701.3
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Preferred Model	FEM	FEM	FEM	FEM	FEM	FEM	FEM	FEM	FEM

P-values are *** Significant at 1% level, ** Significant at 5% level, * significant at 10% level

4.2 Model selection between PLS and REM

Result of Breusch-Pagan tests as in table 7 exhibits that Random Effect method (REM) is favorable than Pooled OLS (PLS) to analyze panel data set for all leverage measurement, both in the overall sample across sectors.

Table 7 – Result of Breusch-Pagan for Lagrange Multiplier Test

DEPENDENT VARIABLE : TOTAL MARKET LEVERAGE (TDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	4880.7	117.3	229.1	680.0	536.1	260.8	426.0	155.1	948.2
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Preferred Model	REM	REM	REM	REM	REM	REM	REM	REM	REM

DEPENDENT VARIABLE : LONG-TERM MARKET LEVERAGE (LDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	3937.7	118.9	203.0	523.9	426.9	327.6	285.9	200.6	874.1
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Preferred Model	REM	REM	REM	REM	REM	REM	REM	REM	REM

DEPENDENT VARIABLE : SHORT-TERM MARKET LEVERAGE (SDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	4483.5	47.5	152.3	649.7	604.9	136.2	406.3	84.5	730.6
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***	0.000 ***
Preferred Model	REM	REM	REM	REM	REM	REM	REM	REM	REM

P-values are *** Significant at 1% level, ** Significant at 5% level, * significant at 10% level

4.3 Model selection between FEM and REM

Meanwhile, Table 8 shows the result of Hausman tests to select a preferred method of analysis between Fixed Effect (FEM) and Random Effect (REM). The tests indicate that full sample data consistently prefer FEM over REM for all leverage measurements; likewise in across sectors data, it also almost all of the sectors prefers FEM over REM for all leverage measurements. However, REM is only preferred in Miscellaneous Industry for total leverage; the Mining and Trade & Service sectors for long-term leverage, and the Miscellaneous Industry, Consumer Goods industry, and Property sector for short-term leverage.

Table 8 – Result of the Hausman Test for Correlated Random Effects

DEPENDENT VARIABLE : TOTAL MARKET LEVERAGE (TDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	67.117	23.235	27.884	30.490	5.834	11.405	15.536	35.283	14.862
Prob.(Chi-Sq. Stat)	0.000 ***	0.001 ***	0.000 ***	0.000 ***	0.442	0.077 *	0.017 **	0.000 ***	0.021 **
Preferred Model	FEM	FEM	FEM	FEM	REM	FEM	FEM	FEM	FEM

DEPENDENT VARIABLE : LONG-TERM MARKET LEVERAGE (LDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	39.202	26.856	10.073	13.705	11.104	12.562	12.217	13.954	4.560
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.122	0.033 **	0.085 *	0.051 *	0.057 *	0.030 **	0.601
Preferred Model	FEM	FEM	REM	FEM	FEM	FEM	FEM	FEM	REM

DEPENDENT VARIABLE : SHORT-TERM MARKET LEVERAGE (SDMV)

	Full Sample	1_AGRI	2_MINI	3_BASI	4_MISC	5_CONS	6_PROP	7_INFRA	8_TRAD
Chi-Sq. Statistic	33.811	52.039	16.322	19.089	4.261	7.478	5.204	52.442	18.326
Prob.(Chi-Sq. Stat)	0.000 ***	0.000 ***	0.012 **	0.004 ***	0.641	0.279	0.518	0.000 ***	0.006 ***
Preferred Model	FEM	FEM	FEM	FEM	REM	REM	REM	FEM	FEM

P-values are *** Significant at 1% level, ** Significant at 5% level, * significant at 10% level

5. Full sample (Country level) analysis

Based on model selections as in table-6, table-7 and table-8, the FEM regression is preferable to describe the relationship between leverages and capital structure determinants in full sample dataset. Firm size impacts positively on total leverage and long-term leverage, but insignificantly on short-term leverage. This is probably as firms seek short-term debt financing, the creditors less consider to firm's size. In other words, the creditors are more concern about size when firms seek long-term financing. This outcome sustains TOT which suggests a positive impact of firm size on leverage because the large firms tend to be stable operation and lower probability of bankruptcy (Elsas & Florysiak, 2008; Nagano, 2003). As a result, the lenders deem these firms as low risky entities and charge with lower interest rates which drive them to consume more debt financing (Deesomsak et al., 2004).

Growth opportunity is negatively associated with all leverage measurement and strongly supports AT. According to AT, the firms with excellent growth opportunities maintain less debt to elude the creditor's constraints regarding risk-shifting problems (Jensen & Meckling, 1976). However, POT argues the higher growth opportunity firms tend to possess higher informational asymmetry. Consequently, they consume more debt financing to diminish asymmetric information (Song, 2005).

Profitability show negatively impacts on total leverage and short-term leverage, but insignificantly on long-term leverage. This probably indicates that the firm's profitability gets more lender's attention when the companies look for short-term debt financing and less lender's attention when they seek long-term debt financing. This result supports POT that the firms with high profitability tend to have more internal resources which can be used as a source of financing before external fund utilization (Harris & Raviv, 1991; Titman & Wessels, 1988).

Tangibility impact positively on all leverage measurement and confirm TOT which postulates that tangible assets are required as collateral in borrowing funds; thus, the firm with higher tangible assets have a greater debt capacity and encourage to borrow more from lenders (Elsas & Florysiak, 2008; Frank & Goyal, 2009).

Liquidity exhibits a negative association with total debt and short-term leverage, but insignificant impact on long-term leverage. This outcome confirms POT that the firms which have stronger liquidity level may use this kind of assets as their financing source rather than using external debt financing (de Jong, Kabir, & Nguyen, 2008; Deesomsak et al., 2004).

Firm risk has a negative impact on total leverage and short-term leverage which strongly confirms TOT, AT and POT (Harris & Raviv, 1991; Krishnan & Moyer, 1997; Titman & Wessels, 1988). TOT predicts the risky firms tend to have greater costs of financial distress which discourage them from consuming more debt. AT proposes that the firms with a higher level of risks will be charged by lenders at higher premium rates due to risk-shifting issues. As earnings become volatile, POT suggests firms should use their internal source due to their difficulty in accessing external financing. Surprisingly, earning volatility is positively correlated on long-term leverage though less impact at 10% significant level; however, this contradicts with those prominent capital structure theories and accordance with (Li, Hsiao, & Li, 2015) study which showed a positive correlation between capital structure and the volatility of earnings.

6. Subsample (sector level) analysis

Based study in ten developed countries, (Booth, Aivazian, & Demirguc-kunt, 2001) suggested that the size of coefficients and signs are expected to be different across industries. Hence, to analyze the indirect influence of sectoral behavior on the mechanism between leverages and determinates, the sample firms are partitioned into sectors. The results of regressions which describe the association between leverages and explanatory variables across sectors could be seen in table-4 for FEM and table-5 for REM with considering model selections focus on table-8.

Size of the firm shows a positive association with total debt among the agriculture, infrastructure, and trade & service sectors; meanwhile, in miscellaneous industry and consumer goods industry, this variable shows a negative association with total leverage. The rest of sectors, i.e., mining, basic industry, and property indicate an insignificant effect on total leverage. The association between firm size and long-term debt is positive across agriculture, mining, and infrastructure sectors; but miscellaneous industry shows a negative association. The remaining sectors, i.e., basic industry, consumer goods, property, and trade& service have no significant relationship. Firm's size indicates a positive correlation on short-term leverage in the agriculture and infrastructure sectors; whereas consumer goods industry points out negative association. The others fail to show a significant impact. The positive association supports TOT (Deesomsak et al., 2004; Nagano, 2003), whereas negative association confirms POT (Titman & Wessels, 1988).

Growth opportunity exhibits a negative relationship with total leverage in all sectors, although consumer goods industry does not show a significant outcome. In relation with long-term leverage, growth opportunity still shows negative relation in almost all of the sectors; except miscellaneous industry and consumer goods industries which have insignificant results. Growth opportunity also impacts negatively on short-term leverage in the sectors of mining, basic industry, miscellaneous industry, property, infrastructure, and trade & service. The negative relationship between growth opportunity and leverages confirms AT (Song, 2005).

Profitability is negatively related to total leverage for all sectors, whilst trade& service sector does not show significant results. Profitability also impacts negatively on long-term leverage in the sectors of mining, miscellaneous industry, and property, but other sectors indicate insignificant impact. Similar to its relation with total leverage, profitability shows a negative association with short-term leverage in all sectors, despite the sectors of consumer goods, property, and trade & service show insignificant outcomes. The negative association between profitability and leverages confirms POT (Schoubben & Hulle, 2004).

Asset structure indicates a positive association with total debt in all sectors; though the mining sector, miscellaneous industry, and consumer goods industry exhibit insignificant results. Tangibility also impacts positively on long-term leverage in the sectors of consumer goods, property, infrastructure, and trade; the remaining sectors do not show significant results. Tangibility also impacts positively on short-term leverage in the infrastructure sector; but surprisingly, it affects negatively in the consumer goods industry. A positive relationship between tangibility and leverages supports TOT (Elsas & Florysiak, 2008), whereas a negative relationship confirms POT (Schoubben & Hulle, 2004).

Liquidity indicates a negative association with total leverage in all sectors, except for property sector which shows a positive association between liquidity and total debt. However, the association between liquidity and long-term debt exhibits a positive relationship in the miscellaneous industry, consumer goods, and property sectors; except for infrastructure sector indicates a negative relationship. In general, the association between liquidity and short-term leverage is negative in all sectors, though it does not show significant association in some sectors. The negative association between liquidity and leverage supports POT (Deesomsak et al., 2004). In another side, TOT predicts a positive relationship that firm's debt capacity as liquidity level escalates their ability in fulfilling obligations (Anderson, 2002; Manos, Murinde, & Green, 2001). This finding consistent with (Feidakis & Rovolis, 2007)

study that liquidity is positively associated with long-term leverage, but it is negatively correlated with short-term leverage among the construction firms in Europe.

. Firm risk indicates a negative relationship with total leverage in infrastructure sector, although it exhibits a positive relationship in trade & service sector. In relation with short-term leverage, firm risk exhibits negative impact in sectors of agriculture and infrastructure. Surprisingly, firm risk has a positive influence on long-term leverage in the agriculture and trade & service sectors, while the remaining sectors do not show significant influence. The negative influence of earning volatility on leverages confirms TOT, AT and POT (Harris & Raviv, 1991; Myers, 2001; Titman & Wessels, 1988), whereas a positive association between firm risk and leverages contradicts with these theories which is similar to a study result by (Correa et al., 2007).

V. Conclusion

We analyzed firm-specific determinants on three leverage measurements, i.e., total market leverage (TDMV), long-term market leverage (LTMV), and short-term market leverage (SDMV) across sectors in Indonesian listed companies using unbalance panel dataset. Result of full sample data (country level) analysis shows that firm-specific determinants explain the variation of leverage measurements, i.e., total, long-term, and short-term debt ratio, are about 71.24%, 62.78%, and 65.50% respectively. Firm's size and asset tangibility strongly confirm TOT for all leverage measurements; growth opportunity is in line with AT for three leverage measurements; while profitability, and liquidity support POT for all of those leverages. However, firm business risk showed confounding results, it confirms TOT, POT and AT for total debt and short-term debt; but for long-term debt ratio, it indicates contradiction with those theories

Meanwhile, the results of further analysis of subsample data (sector level) exhibit that firm-specific capital structure determinants influence differently on those three leverage measurements across sectors. Firm's size confirms TOT in all sector for all leverage measurement, except for miscellaneous industry for total leverage & long-term leverage, and consumer goods industry for total leverage & short-term leverage. Growth opportunity strongly supports AT in all sector for all leverage measurements. Profitability is in line with POT in all sector for all leverage measurements. Asset tangibility strengthens TOT in all sector for all leverage measurement, except for consumer goods industry for short-term leverage. Liquidity confirms POT in all sector for short-term leverage, but it has different results for long-term leverage as in miscellaneous industry, consumer goods industry, and property sector. Firm's business risk has confounding results in influencing leverages, it negatively impacts on short-term leverage in agriculture, consumer goods, and infrastructure sectors, but positively affects in miscellaneous industry. Surprisingly, firm risk indicates a positive impact on long-term leverage in agriculture and trade & service sectors, which contradicts with prominent capital structure theories (TOT, POT, and AT).

From the theoretical point of view, this study sustains past literature that firms financing patterns are diverse across sectors. The variety of capital structure determinants across industries is due to characteristics uniqueness of each sector. Lastly, these findings confirm the argument of (Booth et al., 2001) who proposed that coefficient sizes and signs are supposed to be different across industries.

VI. Policy Implications and Recommendation

This study furnishes a guideline for the firm's managers to consider an appropriate set of important variable suited to concerning sector in determining their financial structure, both long-term and short-term, decision making. Additionally, this study offers valuable information for financial institutions in designing lending strategy by considering determinants which affect borrowing policy for each sector.

This study has not investigated the period of observation between pre- and after- the global financial crisis in 2008. Therefore, further study may also examine this effect on the association between leverage and determinant across sectors by considering those period dimensions since each sector may react differently between pre- and after- global financial crisis.

VII. Acknowledgments

We are grateful to The Indian Council for Cultural Relations (ICCR) as well as the Ministry of Finance (MoF) of the Republic of Indonesia for financial support to conduct this study. We also thank anybody for their contribution to this paper. We also thanks for reviewers and editors team as well as all participants which provide us suggestions and critiques for better improvement of this paper.

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