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Capital Structure and Adjustment Speed: Evidence From Listed Manufacturing Firms in Indonesia and Malaysia

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This paper identifies factors determining capital structure and estimates the speed at which firms adjust to optimal debt in Malaysian and Indonesian manufacturing firms. It uses the difference Generalized Method of Moments (GMM) estimator and the partial adjustment model in a sample of 141 Malaysian and 96 Indonesian firms, which include many of the major manufacture companies in these economies. The results suggest the existence of dynamic capital structure in both countries, but differences in adjustment speed towards optimal debt and factors affecting the optimal debt levels are evident between these countries. Firm-specific factors such as tangibility of assets, non-debt tax shield, and profitability significantly affect optimal debt in both countries. However, most country-specific factors are insignificant determinants, GDP in Malaysia being the sole exception. The findings of this study are helpful for corporate managers, policymakers, and regulatory authorities in monitoring the amount of debt used by the firms and their adjustment speed towards target debt to avoid the bankruptcies. Financial reforms can be worked out in these economies to better support the firms in use of optimal debt.

Keyword: *Dynamic capital structure, speed of adjustment, panel data, partial adjustment model GMM*

JEL Classification: G32

Introduction

Several theories, based on the empirical findings, attempt to explain the firms financing behaviour. These theories contradict each other in explaining the dynamism of firms' financing decisions (Lemma & Negash 2014). As an example, trade-off theory emphasizes the use of optimal debt that maximizes the value of the firm, while market timing theory of Baker and Wurgler (2002) suggests the issuance of equity when share prices are higher. Similarly pecking order theory negates the presence of optimal capital structure and emphasizes the use of internal funds to finance assets in order to avoid the adverse selection cost due to information asymmetry (Mukherjee & Mahakud, 2010). Inertia theory also suggests the persistence of capital structure even after the equity shock.

Despite these controversies, the dynamic

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trade-off theory of capital structure finds a support in the recent literature of the corporate capital structure. Jalilvand and Harris (1984) provide evidence that the firms make movement towards long-run financial targets. Ozkan (2001), for UK firms, confirms the existence of target capital structure and partial movement towards it due to cost of adjustment. For US, Flannery and Rangan (2006) also conclude the presence of target debt and find the firms deviating from target and making partial adjustment towards it. Similarly dynamism of capital structure is also confirmed by Mukherjee and Mahakud (2010) for Indian firms. Earlier theories of capital structure suggest that the companies have target debt ratios and managers try to keep the actual capital structure equal to the target. Practically we hardly see a firm having same target debt levels every year and capital structures often are dynamic. Some variation occurs without managerial actions, such as changes in the stock price due to overall market conditions. Some changes occur due to economies of scale with respect to raising capital—companies often raise large amounts of capital less frequently instead of small amounts often because of transaction costs. Other changes occur as companies deliberately deviate from their target to take advantage of unexpected opportunities. There are evidences that are inconsistent with the static optimal target capital structure implied by the trade-off theory. Flannery and Rangan (2006) show that firms tend to make a partial adjustment each year, moving about 30% of the way toward their target capital structure.

Having known the existence of dynamic capital structure in developed countries, it becomes necessary to understand it in context of developing countries. As compared to developed countries, little is known about the dynamics of the financing behavior of the firms in the developing countries. The application and the generalization of the findings regarding the existence of dynamism in capital structure from the developed countries cannot be extended to developing countries due to differences in the level of economic development, rules of law, financial market development, development of regulatory authorities and others. Very few cross country studies aiming at estimating the adjustment speed towards target capital structure and investigating factors affecting target capital structure exist for developing economies. As per the authors' knowledge this study is expected to be one of the earlier cross country studies focusing the South East Asian Countries, particularly Malaysia and Indonesia. Furthermore, the manufacturing sector in Malaysia and Indonesia makes contribution of 23 percent and 21 percent respectively in the GDP of their economies (World Bank, 2014) and produce lot of employment opportunities. This contribution of manufacturing sector in GDP in both countries is one of the highest in the region. It is greater than 18 percent of the Singapore (World Bank, 2014).

Given the enormous contribution of the manufacturing sectors in both countries, differences in level of economic development, and differences in the financial market development and others, it becomes interesting to investigate the existence of dynamism of capital structure, determinants of the optimal capital structure, and estimating adjustment speed towards target capital structure or debt. Recent empirical studies in area of corporate capital structures agree on the importance of target capital structure and report that the firms in developed countries adjust towards it with certain adjustment speed (Ozkan, 2001; Banerjee *et al*., 2004; and Drobetz, Schilling, & Schroder, 2014). Denis (2012) also endorses the applicability and acceptance of dynamic models in explaining the firms' capital structure behaviors. Hovakimian and Li (2009) state that adjustment speed towards target debt has recently become the hot issue in capital structure literature. However, this important area of capital structure decisions is not explored for Malaysia and Indonesia. The problems of over use of debt by firms, increasing non-performing loans of banking sector, and increasing bankruptcies further compliments the investigation of capital structure decisions in Malaysia and Indonesia. This study focuses on non-financial public corporations of Malaysia and Indonesia, a developing country for which the literature in the field of dynamic capital structure (adjustment speed towards op-

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timal debt and its determinants) is almost non-existent. Besides, this study also examines the determinants of target capital structure using partial adjustment model instead of static models.

Furthermore, in determining the factors affecting corporate debt, this study uses some additional firm and country specific macroeconomic variables such as cash, corporate tax rates, interest rates, and stock market performance. These variables, as per the researcher's knowledge, have not been used in previous studies of determinants of capital structure of Malaysia and Indonesia. This study is aimed at achieving these objectives. Using balanced panel data of the listed manufacturing firms of both countries, this study makes use of the Arellano and Bond (1991) difference GMM to estimate the partial adjustment model.

This study confirms the existence of target debt among the manufacturing firms located in Malaysia and Indonesia. However differences in adjustment speed towards target debt and factors affecting the target debt are evident for both countries. Indonesian firms are found making the adjustment at higher speed than their Malaysian counterparts. This high speed of adjustment may possibly suggest the lower adjustment cost (Haron et al; 2013) in Indonesia. However, this becomes an interesting question for future research studies. Firm specific factors significantly affecting target debt in these countries are tangibility, non-debt tax shield and profitability. Country specific factors, except GDP in Malaysia, are found to have no impact on target debt in these South East Asian countries. What determines the difference in adjustment speed in this region is an interesting question to be considered in future researches.

Section 2 of this study discusses the available literature of the dynamic capital structure and develops the hypotheses for this study. Section 3 describes the methodology adopted in this study including data source and sample, model, and estimation technique. Section 4 presents the findings of the study. Conclusion of this study is given in section 5.

Literature Review and Hypotheses

Available literature in the area of dynamic capital structure such as Ozkan (2001), Banerjee, Flannery and Rangan (2006), Mukherjee and Mahakud (2010), Haron, Ibrahim, Nor, and Ibrahim (2013), Memon, Rus, and Ghazali (2015) confirm the existence of optimal debt ratios in different countries. The adjustment speeds towards optimal debt ratios are not found to be the same in these studies. Ozkan (2001), for UK based firms, finds the adjustment speed of 43% towards target debt. For US, Flannery and Rangan (2006) report the adjustment speed of 34 percent. Similarly Mukherjee and Mahakud (2010) report the adjustment speed of 43 percent for Indian firms. This difference in adjustment speed in different studies suggests that the various factors such as level of financial development determine the adjustment cost and affect the speed in different economies (Lemma & Negash; 2014).

So far as the determinants of optimal debt are concerned, different sets of variables are used in the earlier empirical studies. Most commonly used variable is the profitability. Pecking order theory states that companies prefer to use internally available funds in form of retained earnings to finance assets. Firms use external financing (debt and new equity) once internally available funds are exhausted. Firms with high profits are likely to have more internal funds. Hence, profitable firms use less debt. Studies, such as Fama and French (2002), De Jong, Kabir, and Nguyen, (2008), Mukherjee and Mahakud (2010), and Haron *et al.* (2013) report negative relationship of profitability with debt. Given the results of the majority of empirical studies and prediction of pecking order theory, a negative relationship between firm's profitability and debt is hypothesized for this study. Earnings before interest and taxes (EBIT) to total assets, is used as the measure of the profitability.

According to the trade-off theory of the capital structure, large firms use more debt because such firms are diversified and have low probability of being bankrupt (Bhaduri, 2002). This

argument suggests a positive relationship of firm size with debt. Several empirical studies such as Deesomsak, Paudyal, and Pescetto (2004), De Jong *et al.* (2008), and Lemma and Negash (2014) have reported a significant positive relationship between leverage and firm size. Given the prediction of trade-off theory and the results reported by the majority of empirical studies, we hypothesize positive relationship of firm size with leverage. Natural logarithm of firms' total assets is used as the proxy of firm's size.

Jensen and Meckling (1976) and Myers (1977) argue that the shareholders of the firms having high debt, through management, may be stimulated to invest sub-optimally and take over wealth from the firm's lenders. However, lenders can limit this opportunistic behaviour by forcing the management to present physical assets as collateral for loans. This argument establishes the positive relationship of tangibility with corporate debt. Several studies such as Deesomsak *et al.* (2004), De Jong *et al.* (2008), and Cho, El Ghoul, Guedhami, and Suh (2014) report positive relationship of tangibility with debt. Based on the argument and the results of the many empirical studies given above, a positive relationship between tangibility of assets and debt is hypothesized for this study. Tangibility is measured as the ratio of fixed asset to total assets in this study.

Firms use debt to shelter their earnings from taxes. As per the argument of DeAngelo and Masulis (1980), tax saving can also be obtained from depreciation and other tax credits. Hence this non-debt tax shield is the substitute of the tax shield from debt financing. So firms with larger non-debt tax shields (NDTS) are expected to use less debt in their capital structure. Deesomsak *et al.* (2004), Vivani (2008), and Ameer (2013) report a significant negative relationship between firms' debt and non-debt tax shield. Given the argument of DeAngelo and Masulis (1980) and empirical findings, a negative relationship between NDTS and debt is hypothesized for this study. Firm's depreciation to total assets ratio is used as the measure of non-debt tax shield.

Pecking order theory suggests that firms with liquid, assets such as cash, inventories, and marketable securities, may finance their operations with internal funds. Since high liquidity indicates the possibility of availability of internal funds; hence a negative relationship of liquidity with debt financing can be assimilated (Viviani 2008). Liquidity as the determinant of the optimal debt has been investigated in some of the earlier empirical studies. Deesomsak *et al.* (2004) and Viviani (2008) report negative relationship of liquidity with corporate debt. Given these arguments and empirical evidences in earlier studies a negative relationship of liquidity with leverage is hypothesized for this study. Ratio of current assets to current liabilities has been used as the proxy of liquidity.

Baker and Wurgler (2002), in their market timing theory, suggest that firms prefer issuing equity when market value, relative to book value, of the firm is very high. This theory predicts negative relationship of firms' share price performance with debt. Change in the share prices of the firms suggest that firms move away from their target capital structure. Dynamic trade-off theory suggests that when firms move away from optimal capital structure they make adjustment toward target. Empirical studies of Graham and Harvey (2001), Deesomsak *et al.* (2004), and Haron *et al*. (2013) report negative relationship of share price performance with corporate debt. Given the findings of these empirical studies and predictions of market timing theory, a negative relationship is hypothesized between share price performance and corporate debt. The first difference of the logs of annual share prices (matched to the month of the firm's fiscal year end) is used as the proxy of this variable.

This study also considers three country specific variables affecting corporate debt. GDP growth is supposed to affect financing activities of the firms. For example, in the economic boom, many of the companies exploit the opportunities and initiate new investment activities to enhance firm value and generate more profits. De Jong *et al.* (2008) report positive relationship of firms' debt with annual GDP growth. Camara (2012) also finds reports that GDP growth has positive and statistically significant influence on capital structure in U.S.

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Given these findings from empirical studies, a positive relationship of country's GDP growth rate with corporate debt is hypothesized for this study. This variable is measured as yearly change in GDP growth.

Inflation has also been considered as the determinant of corporate debt in some studies. In inflationary period there are fewer saving and creditors will lend little and allocate capital less effectively. This argument establishes the negative relationship between inflation and corporate debt. Same argument is given by Beck, Demirguc-Kunt and Maksimovic (2002) who suggest that during inflationary period, it is less likely that firms will obtain outside financing; hence the proportion of investments financed by external funding declines. Demirguc and Maksimovic (1999), and Deesomsak, Paudyal, and Pescetto (2009) also report negative relationship of inflation with debt. For this study, a negative relationship of inflation with optimal debt is hypothesized. Inflation is measured as the change in the monthly consumer price index (matched to the month of the firm's fiscal year end) in this study.

Ooi (1999) argues that firms are likely to borrow more when the cost of borrowing is low. This argument is also confirmed in the survey based studies of Graham and Harvey (2001) and Drobetz, Pensa, and Wanzenried (2007). Therefore, if interest rates increase, firms use less debt. Since firms are concerned with costs of borrowing, a negative relationship is expected. Eldomiaty (2007) and Antoniou, Guney, and Paudyal (2008), report negative significant relationship of interest rate with corporate debt. Negative relationship of interest rate with corporate debt is also hypothesized for this study. Monthly lending rate (matched to the month of the firm's fiscal year end) is used as the measure of interest rate.

Data and Methodology

Data and Sample

This study uses the balanced panel data (fiscal year end) from 2005 to 2012 of 141 Malaysian and 96 Indonesian manufacturing firms listed at Bursa Malaysia and Bursa Efek Indonesia respectively. The data of company specific variables is extracted from the Datastream database. Datastream contains the data of 221 Malaysian manufacturing firms and 121 Indonesian manufacturing firms. Having excluded the companies with missing data the final sample consists of 141 Malaysian firms and 96 Indonesian firms. Full sample (both countries together) comprises of 237 firms with 8 years of data with 1896 firm year observations. The data of country specific variables, GDP, inflation, and interest rate is obtained from World Bank's World Development Indicators (WDI). This study uses long term debt to total assets as the measure of the debt. This proxy of debt has been used in many studies investigating the determinants of capital structure such as Titman and Wessels (1988), Delcoure (2007), and Haron et al. (2013).

Model Specification

As per the literature available on capital structure; the optimal (target) debt (TD) is assumed to be the function of country specific and firm specific variables (V_{kit}). This is shown below in equation (1).

$$TD_{it} = \sum_{i=1}^{n} \beta_k V_{kit} + u_{it} \quad (1)$$

As discussed, companies are not always at their optimal debt levels due to presence of adjustment cost and other market frictions. However they tend to approach towards their target debt levels overtime. This suggests that firms make partial movement to fill the gap between actual debt (AD) and the target debt level (TD). Following De Miguel and Pindado (2001), this financing behaviour of the firms can be expressed using partial adjustment model. This partial adjustment model of target debt assumes that any change in actual debt in the current period from the previous period (AD_{it}-AD_{it-1}), will be equal to a proportion, δ_{it}, of target change (TD_{it}-AD_{it-1}). This can be depicted as follows:

$$AD_{it}\text{-}AD_{it-1} = \delta_{it}(TD_{it}\text{-}AD_{it-1}) \quad (2)$$

In equation (2), δ_{it} is the adjustment coefficient that takes the value between 0 and 1. Speed of adjustment towards target is denoted by $1/\delta_{it}$ Now, consider two extreme cases of the values of δ that is 1 and 0. If the value of δ_{it} is 1 it means that complete adjustment is made and firm is at target debt level ($AD_{it}=TD_{it}$). If value of δ is 0 it means that no adjustment is made and $AD_t=AD_{t-1.}$

Equation (2) can be further transformed as:

$$AD_{it}= AD_{it-1}+\delta_{it}TD_{it}-\delta_{it}AD_{it-1} \quad (3)$$

$$AD_{it}= (1-\delta_{it})AD_{it-1}+\delta_{it}TD_{it} \quad (4)$$

Now replacing the value of TD_{it} from equation 1 to equation 4 we get:

$$AD_{it}=(1-\delta_{it})AD_{it-1}+\delta_{it}(\sum_{i=1}^{n}\beta_k V_{kit}+u_{it}) \quad (5)$$

Since the firm specific factors considered in this study are profitability (*pro*), tangibility (*tang*), size (*size*), liquidity (*liq*), non debt tax shield (*ndts*), and share price performance (spp), and country specific factors considered are GDP growth rate (*gdp*), interest rate (*inr*), and inflation (*inf*), so equation (5) can be expanded as:

$$\begin{aligned} AD_{it} = {} & (1-\delta_{it})AD_{it-1}+\delta_{it}\beta_1 pro+\delta_{it}\beta_2 tang \\ & +\delta_{it}\beta_3 size+\delta_{it}\beta_4 liq+\delta_{it}\beta_5 ndts+\delta_{it}\beta_6 spp \\ & +\delta_{it}\beta_7 gdp+\delta_{it}\beta_8 inr+\delta_{it}\beta_9 inf+u_{it} \end{aligned} \quad (6)$$

Assuming $\lambda_0=(1-\delta_{it})$ and $\delta_{it}\beta_k=\lambda_k$, equation (6) can be re-written as:

$$\begin{aligned} AD_{it} = {} & \lambda_0 AD_{it-1}+\lambda_1 pro+\lambda_2 tang+\lambda_3 size+\lambda_4 liq \\ & +\lambda_5 ndts+\lambda_6 spp+\lambda_7 gdp+\lambda_8 inr+\lambda_9 inf \\ & +u_{it} \end{aligned} \quad (7)$$

The operational definitions of the variables used in this study are appended in appendix 01.

Equation (7) is subject to estimation for this study where the value of λ_0 and λ_k helps to estimate adjustment speed and identify the factors affecting target debt respectively.

Estimation Technique

In a multiple linear regression, endogeneity is said to exist if at least one of the regressors is correlated with the residual. This clearly violates the assumption of exogeneity. The endogeneity problem occurs when there is an omitted variable that is correlated with some regressors. It also arises when the dependent variable and at least one of the independent variables are determined simultaneously in a system. Furthermore it arises when there is measurement error in at least one of the regressors. Presence of endogeneity makes the OLS estimates biased and inconsistent. To avoid the problems of endogeneity, an instrumental variable approach is used. Other instrumental variable techniques require the determination of external instruments to be used, which might be challenging sometimes. However GMM uses the lagged values of the explanatory variables as the instruments.

Model specified as equation 7 is a dynamic model as it includes the lag of dependent variable as the independent variable. There is also the problem of endogeneity in the above model and the number of firms (237) is greater than number of the years (8 years data). Given these complexities of the model and the panel data, an instrumental variable (IV) approach is used to estimate the model. Roodman (2009) suggests the use of Generalized Method of Moments (GMM) in presence of the above complexities. Difference GMM of Arellano and Bond (1991) use the lags of the variables within the model as the instruments. It is proved by Arellano and Bond (1991) that consistent estimates of the parameters are provided by GMM using the instruments obtained from orthogonality conditions that exist between variables' lagged values and the disturbances. Flannery and Hankins (2013) report that, out of established estimation techniques of dynamic panel model, GMM appears to perform better. So in this study, we use Arellano and Bond (1991) difference GMM to estimate the model. To test the validity of instruments, Hansen J statistics is used. Higher p-value (insignificant) for this test is better because the null hypothesis for this test is that the instruments are exogenous. This study also uses

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Table 1. Descriptive Statistics

Variable	Full sample		Malaysia		Indonesia	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std.Dev
llev	0.093091	0.175459	0.067332	0.086485	0.130926	0.250323
size	15.830120	4.359200	12.426450	1.250774	20.829250	1.609027
prof	0.030893	2.579946	0.059776	0.127671	-0.011490	4.050853
tang	0.399181	0.210090	0.402118	0.202345	0.394868	0.221038
ndts	0.034014	0.034774	0.031062	0.020932	0.038350	0.048085
liq	3.909184	14.217090	3.829036	7.157690	4.026901	20.593250
spp	2.431657	3.592436	-0.278160	1.191997	6.411694	1.771183
gdp	5.255380	2.037437	0.048408	0.025185	0.058943	0.005714
inf	4.584177	3.226819	0.026500	0.013845	0.074250	0.030539
inr	7.055570	1.683552	0.063700	0.003687	0.080625	0.022575

Table 2. Correlation Matrix

	llev	size	prof	tang	ndts	liq	spp	gdp	inf	inr	VIF
llev	1.000										
size	0.197	1.000									8.160
prof	0.028	0.015	1.000								2.730
tang	0.216	0.028	0.028	1.000							1.220
ndts	0.097	0.050	-0.765	0.225	1.000						2.930
liq	-0.087	-0.020	0.002	-0.081	-0.057	1.000					1.020
spp	0.138	0.728	0.007	-0.029	0.063	0.010	1.000				7.580
gdp	0.036	0.246	-0.007	0.021	0.017	0.008	0.252	1.000			1.100
inf	0.146	0.669	-0.032	0.008	0.110	0.004	0.634	0.274	1.000		4.760
inr	0.115	0.440	-0.031	0.028	0.098	0.000	0.408	0.226	0.817	1.000	3.230
										Mean VIF	3.640

Arellano-Bond second order Autocorrelation (AR2) to investigate that the error term of the differenced equation is not serially correlated at the second order (AR2). Higher p-value is also needed here.

Empirical Results

Table 1 depicts a summary of descriptive statistics for the variables used in this study. Stark differences are evident between Malaysia and Indonesia in terms of the mean of debt, size of the firms, profitability, share price performance, inflation, and interest rates. Average debt used by the firms in full sample is 9.3 percent. However Indonesian firms seem to use almost double debt (13.1 percent) than their Malaysian counterparts (6.7 percent). Previous studies such as Ting and Lean (2011) document higher debt ratios for the Malaysian firms. The difference in the debt ratios may be attributed to time period of the studies and sample size. Higher debt ratio in Indonesia suggests that Indonesian manufacturing firms are riskier than Malaysian firms. The riskiness of the Indonesian firms is also evident from the profitability ratios; as Indonesian firms on average are making loss of 1 percent. Findings of higher debt ratios, lower profits, and higher adjustment speed of Indonesian firms are in alignment and suggest that riskier firms should have higher speed of adjustment towards optimal debt to avoid the financial distress. Average size of Indonesian firms is also higher than the Malaysian firms; so higher debt may possibly be justified by this. This may also suggest that Malaysian firms are growing. Share price performance of the Indonesian firms is also higher than the Malaysian manufacturing firms. If we look at the country economic factors, GDP growth is almost the same in both countries; but inflation and interest rates are higher in Indonesia.

Table 2 reports the Pearson's correlation matrix and variance inflating factors (VIF), used to check the existence of multicollinearity in the data. It is evident that correlation coefficients among the variables are less than acceptable level of 0.9, as suggested by Asteriou and Hall (2011), and it is not likely to cause the problem of multicollinearity. This is also confirmed by

Table 3. Generalized Methods of Moments Estimation Results

Variables	Full Sample				Malaysia				Indonesia			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	t	Coef.	T
llev(-1)	0.3791	2.26**	0.3936	2.4**	0.5763	5.81***	0.5650	5.69***	0.1132	0.35	0.1228	0.39
Size	-0.0102	-0.32	-0.0205	-0.67	-0.0289	-1.17	-0.0197	-1.24	-0.0727	-1.31	-0.0734	-1.29
Prof	-0.0046	-0.5	-0.0073	-0.96	-0.0365	-0.42	-0.0441	-0.5	-0.0275	-1.68*	-0.03	-1.93*
Tang	0.1714	2.27**	0.1765	2.53**	0.0771	1.53	0.0481	1.09	0.7112	1.45	0.6583	1.49
Ndts	-0.9822	-1.49	-1.0611	1.68*	0.1642	0.56	0.1772	0.61	-3.8186	-2.2**	-4.0941	-2.13**
Liq	0.0002	0.84	0.0003	0.89	0.0001	0.24	0.0002	0.29	0.0006	1.18	0.0007	1.09
Spp	0.0072	0.21	0.0053	0.17	0.0504	1.44	0.0162	0.91	0.001	0.04	0.0255	0.46
Gdp	-0.0014	-1.36			-0.2337	2.42**			0.3722	0.25		
Inf	0.0010	0.41			0.2797	1.46			0.1551	0.23		
Inr	0.0010	0.14			0.1007	0.09			-0.837	-0.42		
AR 1 Test	1.26	(0.207)	-1.25	(0.213)	-4.21	(0.00)	-4.34	(0.00)	-1.48	(.139)	-1.45	(0.148)
AR 2 Test	0.16	(0.871)	-0.02	(0.981)	1.15	(0.252)	1.36	(0.175)	0.26	(0.793)	0.52	(0.600)
Hansen-J Statistics	47.34	(0.064)	42.81	(0.143)	39.33	(0.244)	42.64	(0.147)	35.32	(0.406)	40.09	(0.218)

llev is long term debt to total assets, profitability (prof) is EBIT divided by total assets, tangibility (tang) is the ratio of fixed assets to total assets. Size is natural logarithm of total assets, non debt tax shield (ndts) is the ratio of depreciation to total assets, liquidity (liq) is the ratio of current assets to current liabilities, share price performance (spp) is the first difference of the logs of annual share prices (matched to the month of the firm's fiscal year end). GDP growth rate (gdp) is the yearly % change in nominal GDP, interest rate (inr) is the monthly lending rate (matched to the month of the firm's fiscal year end). Inflation (inf) is the change in the monthly consumer price index (matched to the month of the firm's fiscal year end) . Coefficients significantly different from zero at the 1%/5%/10% level are marked with ***/**/*.

the VIF given for each variable and the mean of VIFs for all variables. The mean VIF and individual variables VIF is lower than 10, which is suggested by Gujarati (2004). Variables having mean VIF of more than 10 are likely to cause the problem of multicollinearity. So, both correlation matrix and mean VIF confirm the non-existence of multicollinearity in our data.

The null hypothesis of Hansen- J test is that the instruments are exogenous. For AR(1) and AR(2) test the null hypotheses are that the error terms of differenced equation are not serially correlated. The results (table 3) show that the p-values for both tests are greater than zero suggesting that we cannot reject the null hypotheses and our instruments are valid and error terms are not serially correlated at level 2. Since we are using differenced form, so by construction, error term is probably serially correlated at level 1. So AR (1) is not mainly our concern. However, AR (2) is important as it detects autocorrelation in levels.

Table 3 further shows that the coefficient of lagged value of long term debt for full sample (both countries together) in model 1, which considers both firm and country specific factors affecting the target debt, is found to be 0.379, which is significant at 5%. The significance of the lagged dependent variable suggests the existence of target debt among firms in Malaysia and Indonesia. The adjustment speed in the full sample of both countries turns out to be 62.1 percent[1]. In terms of time, it takes 1.6 years[2] to be on the target debt. This high adjustment speed in Malaysia and Indonesia is comparable with the adjustment speed reported by Lemma and Negash (2014) for nine African economies. In model 2, which only considers the firm specific determinants of debt, the adjustment speed is not different from the model 1 (61 percent). For Malaysia alone, the adjustment speed in model 1 is 42.4 percent which is slower than the 62 percent of the full sample. The Malaysian firms take 2.36 years to make complete adjustment towards target debt. The adjustment speed for Malaysian firms in model 2 is 43.5 percent and estimated time to make full adjustment is 2.3 years. The adjustment speed for Indonesian firms is estimated to be 88.7 percent in model 1, which is very high and not preceded. It implies that it takes 1.127 years to make complete adjustment towards target. In second model,

[1] Adjustment speed is calculated as $\delta_{it}=(1-\lambda_0)$
[2] Calculated as $1/\delta_{it}$

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considering only firm specific factors, the adjustment speed for Indonesian firms is 87.7 percent that implies the full adjustment in 1.14 years. The reasons of the difference in adjustment speed of both countries may be supported by the findings of Oztekin (2015) who reports that higher quality institutions lead to higher adjustment speed towards target debt. Similarly there are many other studies that investigate the determinants of adjustment speed.

Regarding the factors affecting the corporate target debt in Malaysia and Indonesia together, table 3 (model 1) shows that among all the variables, tangibility is the only variable which has positive significant impact on corporate optimal debt. This implies that manufacturing firms in these countries use tangible assets as collateral to raise corporate debt. Similar findings regarding the impact of tangibility on corporate debt are reported by Antoniou et al. (2008), Ting and Lean (2011), and Cho et al. (2014). In model 2 where only firm specific variables are considered as the determinants of corporate debt, tangibility and non-debt tax shield appear to affect significantly to corporate debt in this region. Tangibility and non-debt tax shield has positive and negative significant impact respectively on corporate debt. Negative significant relationship of non-debt tax shield with optimal debt is supported by the argument that firms in this region consider tax savings obtained from depreciation as an alternative of the debt tax savings. Deesomsak et al. (2004) and Flannery and Rangan (2006) also report negative relationship of non-debt tax shield with corporate leverage.

Analysis of the results given in table 3 shows that in Malaysia, none of the firm specific determinants of debt affects corporate debt significantly in both models. Only GDP, which is country specific variable, has negative significant effect on corporate borrowing decisions of the manufacturing firms in Malaysia in model 1. Negative significant relationship of GDP with the corporate debt can be justified by the argument of Myers (1977) who states that in good economic times firms also grow and high growth firms may use less debt because the financial distress cost is high for the growth firms (Antoniou et al., 2008). Insignificance of all firm specific variables in Malaysia may be due to sampling as only manufacturing firms have been considered.

Table 3 further shows that the optimal debt of Indonesian firms is significantly affected by the profitability and non-debt tax shield in both models. Both, profitability and non-debt tax shield have negative significant effect on organizational debt. Negative significant relationship of non-debt tax shield with corporate debt in Indonesia implies that Indonesian firms also consider it as the alternative of debt tax shield. Negative significant relationship of profitability with corporate debt in Indonesia is justified by the pecking order theory of Myers and Majluf (1984), which states that the profitability enhances the availability of internal funds and firms prefer using internal funds to finance assets. Baker and Wurgler (2002), De Jong et al. (2008), and Mukherjee and Mahakud (2010) also report negative significant relationship of profitability with leverage.

Moreover, analysis of the results given in table 3 shows that firm specific variables such as size, liquidity, and share price performance have insignificant role in determining the corporate debt in these two countries. Similarly country variables such as inflation and interest rates have also insignificant impact on corporate debt in these countries. GDP seems to affect corporate debt significantly in Malaysia only.

Conclusion

This study attempts to answer the questions regarding the existence of dynamic capital structure, adjustment speed towards optimal capital structure, and factors determining the optimal capital structure in Malaysian and Indonesian manufacturing sectors. Study makes use of panel data from 2005 to 2012. Partial adjustment model used in this study has been estimated using Arellano and Bond (1991) difference GMM.

Findings of this study reveal that the manufacturing firms in Malaysia and Indonesia have target debt and they make full adjustment towards that target in less than 2 years' time.

Country wise analysis reveals that the Indonesian manufacturing firms take almost half of the time (1.12 years) taken by Malaysian manufacturing firms (2.3 years) to make full adjustment towards target debt. The lower adjustment speed in Malaysia may indicate the higher adjustment cost such as investment bankers' cost (Drobetz & Wanzenried, 2006).

Furthermore, this study finds firm profitability, tangibility, and non-debt tax shield as the significant determinants of target debt in this region. GDP is the only country specific variable that significantly affects corporate debt in Malaysian manufacturing sector. Variation in terms of factors affecting the target debt in both countries exists.

The empirical findings of this study have implications for various stakeholders such as corporate managers, policy makers and investors. For instance, this research is helpful for corporate financial managers in understanding the important factors that are affecting the financing decisions, particularly the debt levels and adjustment speed towards target debt. The findings of this study suggest that the financial managers avoid using debt if their earnings are not stable and have high amount of cash available. Firms having high growth in assets are using more debt. Given this finding, financial managers may re-evaluate the decision of using debt to finance their growth, as it might lead to bankruptcy. Financial managers should follow the industry practice while making the financing decisions. They should also consider the equity market performance while making the financing decisions and prefer equity over debt if their stocks are doing well in the market. Findings further imply that financial managers should consider the economic environment in making financing decisions as economic conditions have impact on adjustment speed. Similarly significant impact of stock market development on adjustment speed suggests that managers can make quick adjustment towards target by issuing or repurchasing equity if the stock market is doing well, as the cost of adjustment reduces in developed market.

The findings of this study are also helpful for the policymakers and regulatory authorities such as the Security Exchange Commission, stock exchanges, and the Central Banks to develop the policies that facilitate the organizations using optimal amount of debt and make faster adjustments towards it, to maximize their values and fully contribute in the economy. Based on the findings of this study the policymakers and regulatory authorities can develop early warning system to avoid the bankruptcies and can influence the level of debt used and adjustment speed towards target debt by bringing reforms in the capital market, such as developing the stock market and the bond market to facilitate the corporations in exploiting profitable investment opportunities. The negative relationship of the profitability and cash with leverage implies that firms avoid going for external finance (both debt and equity) and use internal funds. Furthermore, given the finding regarding the impact of interest rate on optimal debt and adjustment speed, policymakers such as Central Bank of a country may devise the monetary policy that can stimulate the firms to always use the optimal debt to maximize the value. The investors and creditors may find the results of this research helpful by understanding the factors affecting corporate borrowing decisions and the adjustment speed towards target capital structure. Shareholders and creditors may avoid investing in the firms that are overleveraged and have lower adjustment speed towards target debt. Existing shareholders can actively participate in corporate governance and influence managers' decisions by participating in annual meetings. Since the stock market development has role in corporate financing decisions, new shareholders may be cautious in making equity investment decisions because firms may issue equity when they think that the stock is overvalued. Similarly creditors can evaluate the debt agency cost and may be willing to invest in organizational debt against the collateral or putting covenants in debt agreements to mitigate the problem.

Findings of this study pave the way for at least two future studies in this region. First study may be aimed at understanding the factors explaining the differences in adjustment speed towards target debt in both countries. Secondly,

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future researches can also extend the scope by taking the sample from all sectors, using more country specific variables, and different proxies of these variables to gain more understanding of the firms' financing behaviour in this region.

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Appendix

Appendix 1. Operational Definitions of the Variables

S. No	Variable	Operational Definition
01	Leverage / Debt	Ratio of long term debt to total assets
02	Profitability	Ratio of EBIT to total assets
03	Tangibility	Ratio of fixed assets to total assets
04	Size	Natural logarithm of total assets
05	Non debt tax shield	Ratio of depreciation to total assets
06	Liquidity	Ratio of current assets to total assets
07	Share Price Performance	First difference of the logs of annual share prices (matched to the month of the firm's fiscal year end)
08	GDP growth	Yearly % change in nominal GDP
09	Interest Rate	Monthly lending rate (matched to the month of the firm's fiscal year end)
10	Inflation	Change in the monthly consumer price index (matched to the month of the firm's fiscal year end)