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THE CAPITAL STRUCTURE DECISIONS OF SHARIAH COMPLIANT AND NON-COMPLIANT FIRMS: EVIDENCE FROM MALAYSIA

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ABSTRACT:

The capital structure puzzle remains largely unanswered. Although some light have been shed on the dynamic forces that shapes the typical firm's debt-to-equity mix, the case of the Shariah-compliant firm's capital structure behaviour remains even more of a mystery. This paper attempts to investigate the capital structure behaviour of Shariah compliant firms of various levels as well those firms who are consistently Shariah non-compliant in Malaysia. The paper utilises a unique dataset of firms of heterogeneous level of Shariah-compliancy status over a 20 year period from the year 1997 to 2016. The paper focuses on the effects of dynamic forces behind capital structure variation such as the optimal capital structure behaviour based on the trade-off, pecking order, market timing and firm fixed effect models of capital structure. This study documents significant evidences in support of the trade-off theory with a high speed of adjustment (SOA) as well as for the time-invariant firm fixed effects across all Shariah compliancy group. Nevertheless, this study's findings show that there are evidences to suggest a moderate trend whereby as the Shariah compliancy group descend, stronger and stronger evidences of market timing behaviour appear amongst other things. This study suggests that segregating firms into different Shariah compliancy groups reveals a rich and diverse area of study which has never been delved in.

KEYWORDS: capital structure, market timing, trade-off theory, equity risk premium, Shariah-compliant firms

JEL CLASSIFICATION: G32, G34

INTRODUCTION

In corporate finance research, there exists, amongst others, a longstanding inquiry into the behaviour and determinants of corporate capital structure. Study on capital structure behaviour was pioneered by Modigliani and Miller (1958; 1963) and is still widely studied today. Despite these years of study, much is still unknown about which class of variables are a reliable and enduring explanator of capital structure variations across firms and time. In 1984, Stewart C. Myers officially introduced the "Capital Structure Puzzle" in his AFA Presidential Speech. The Capital Structure Puzzle essentially asks the question: How do firms decide and manage their capital structure? A number of theories (together with empirical evidence to support them) were proposed to answer this puzzle.

The most significant and widely discussed theories are the static and dynamic trade-off theory, the pecking

order theory and the market timing hypothesis.[144] The trade-off theory suggests that in an imperfect capital market with interest tax shields, there exists an optimum mixture of debt and equity which minimises the weighted average costs of capital. Myers and Majluf (1984) seek to provide an alternative explanation for historical capital structure variation. They propose that the historical capital structure variation seen across capital markets is a direct result of firms' managers following the pecking order hierarchy. They do this in order to protect the interests of old shareholders as well as to reduce the costs of asymmetrical information. The pecking order hierarchy prioritises internal funds first, external debt second and finally external equity, in that particular order when they are in need of funds in order to pursue positive-NPV projects. Whilst the trade-off theory and the pecking order theory focus on firm-specific behaviour, Baker and Wurgler (2003) introduce the market timing hypothesis which places more focus, if not all attention on the conditions of the external equity and debt capital markets as a means to explain the historical capital structure variation. Specifically, the market timing hypothesis posits that the historical capital structure variation are as a direct result of the cumulative actions of firm timing their debt and equity issuance when conditions of external capital markets are favourable for them to do so. In summary, all three main theoretical arguments briefly are able to partially explain the behaviour of historical capital structure variation. They appear to be able to only explain certain segments of firms and at certain period of times. However, it is difficult to defend the notion that any of the three or a combination of them is able to provide an exhaustive explanation of the historical capital structure variation, and thus, the Capital Structure Puzzle[145] remains unanswered.

There exists also an important empirical observation whereby authors such as Lemmon, Roberts and Zender (2008) show very significant firm fixed effects in historical capital structure variation.[146] Past literatures made the case that empirical supports for firm fixed effects far outweigh the explanatory power of all the previous traditional theories of capital structure. However, extremely recent papers such as DeAngelo and Roll (2015) suggests that there may be some flaws in past paper's analysis of firm fixed effects. This may suggest that firm fixed effects may not be the silver bullet in explaining of historical capital structure. Thus far, we have demonstrated how empirical evidence is mixed and limited in providing an explanation for historical capital structure variation. Different empirical evidence supporting different theories and hypothesis may be discovered when different sample of firms at different period of time are utilised. And so, a holistic explanation of historical capital structure variation still eludes us. It is from this perspective that we attempt to provide additional clarity by studying a niche that is mostly ignored by other studies.

This study focuses on Malaysia for three reasons. First, although there are some exploratory works on capital structure behaviour in the Malaysian capital markets, to our knowledge, there has not been any empirical study that examine the Shariah-compliant firm's capital structure behaviour in a holistic way that include the market timing hypothesis and firm fixed effects. Second, as 80% of Malaysian publicly listed firms are Shariah-compliant, and seeing Malaysia is at the forefront of the Islamic finance industry, our analysis is both relevant and helps extend our understanding on capital structure behaviour in an emerging market context. Finally, since the list of Shariah-compliant firms in Malaysia is updated every year by Shariah Advisory Council Securities Commission Malaysia, this will provide us with an opportunity to test whether segregating firms into different Shariah compliancy groups could reveals a different pattern of capital structure behaviour.[147]

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[144] Although there are a number of other theories often labelled as "Managerial Theories" such as the Incentive-Signalling Approach (Ross, 1977), Managerial Discretion (Stulz, 1990) and Discretionary Expenses Approach (Myers, 1977). Special recognition must be given to Jensen and Meckling (1976) for their excellent work on agency costs of equity and debt.

[145] See Myers, S. C. (1984). The capital structure puzzle. *The Journal of Finance*, *39*(3), 574-592.

[146] Firm fixed effects are time-invariant dummy variable that is set to 1 to a particular company and 0 for all the rest of the firms throughout the entire durations. Each firm would have its own firm fixed effects dummy variable. Firm fixed effect thus represents salient time-invariant characteristics of the firm that is unmeasurable (such as firm culture).

[147] This paper also constitutes the first study to investigate Market Timing behaviours in the most advanced Shariah-compliant capital markets in the world. Specifically, we endeavour to answer the questions; What are the

This paper contributes to the literature by first illustrating how Shariah compliancy is not a static property. It is instead a dynamic and ever changing property of all firms in the world. Realising this fact, we then subsequently introduce a unique dataset of firms, whereby we first exhaustively mapped out all Malaysian Shariah compliant firms since the inception of the Shariah Stock Screening procedure in 1997 till the current day, and we then sift and categorise them into different Shariah compliancy 'groups'. Each group corresponds to different levels of 'Shariah compliancy' that reflects the firm's consistency in being compliant to the Shariah across time. Our methodology and the subsequent Shariah compliancy groups provides a rich and new dimension of data which have never before studied from the capital structure point of view.

Our findings suggest that for enduring Shariah compliant firms, market timing variables may not play a significant role in determining a Shariah-compliant firm's capital structure behaviour. The same may be said to be true for pecking order behaviour as well. Our findings also suggest an existence of the target capital ratio, and a significantly fast SOA. The latter findings, coupled with the lack of evidence supporting the market timing hypothesis and the pecking order theory, may indicate that the trade-off theory plays a dominant role in enduring Shariah-compliant firm's capital structure. We also discovered that the capital structure behaviour of firms changes as we descend the Shariah compliancy group. Our results suggest that as we analyse firms who are less consistently Shariah compliant, stronger evidences of Market Timing behaviour are found and the speed of partial adjustments towards the target capital ratio increases. These findings highlight how segregating firms into different levels of Shariah compliancy reveals important key characteristics that extend beyond capital structure behaviour.

The paper is outlined as follows section 2 shall describe the literature review, section 3 will exhibit out methodology, section 4 will discuss the results and finally section 5 will provide a summary of our findings and conclusion.

Literature Review

This section shall describe the prominent theories of capital structure as well as the previous empirical research of capital structure in the US and other developed countries. It will then layout existing empirical research of capital structure in emerging countries and finally, it will conclude with the Malaysian context.

Previous studies show that the trade-off theory rests mainly on the estimation of the speed of adjustment (SOA) which needs to be sufficiently high to provide evidence in its support. There are an abundance of studies that try to estimate the SOA with mixed results. For example, Flannery and Rangan (2004) show evidences of a very high SOA among US firms, whilst Welch (2004) suggests otherwise. The trade-off theory thus, does not possess ubiquitous empirical support throughout the years. The pecking order theory on the other hand, does not have widespread empirical support either. Since it predicts a negative relationship between operating income before interest and depreciation (OIBD), many studies have focused on this variable to make a case for and against the pecking order theory. Huang and Ritter (2004) show the case of the pecking order theory losing explanatory power after the post-war boom, whilst Frank and Goyal (2009) show evidence supports the pecking order theory. The same case can be made for the market timing hypothesis. The empirical debate on the efficacy of the market timing hypothesis rests on demonstrating the relationship between a set of variables and leverage levels. Although Baker and Wurgler (2003) and Huang and Ritter (2004) exhibit empirical support for the market timing behaviour, Hovakimian et al (2003) and Hovakimian (2006) suggest otherwise.

Rajan and Zingales (1995) provide one of the earliest forays of capital structure analysis in developed

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dynamic forces behind enduring Shariah-compliant firm's capital structure variation and are there any differences in capital structure behaviour amongst different levels of Shariah compliant firms as well as consistently Shariah non-compliant firms?

nations other than the US. Their analysis showed that much of the traditional trade-off variables (specifically sales, size, market-to-book ratio, tangibility and profitability) that are found to be significant in the US, also play a similar role in the capital structure of firms in the G-7 countries. Huizinga et al (2007) offer supporting evidence of the notion that multinational firms with European subsidiaries tend to have their subsidiaries' capital structure in a relationship with the subsidiaries home country's corporate tax rate policies. These two papers exhibit strong empirical evidence for the trade-off theory for firms in developed nations. However, Antoniou et al (2008) question the dominance of trade-off theory alone in developed market. They show evidence of the trade-off theory, pecking order theory and market timing hypothesis theory in their five sample developed countries (U.K., U.S., France, Germany and Japan). Similarly, De Miguel and Pindado (2001) demonstrate the presence of both optimum capital structure behaviour and pecking order behaviour in Spanish publicly listed firms. Whilst Mahajan and Tartaroglu (2008) investigate market timing behaviour among publicly listed firms in the G-7 countries and their results tend to suggest a short term effect of market timing that dissipates in the long run. All this suggest that debate on capital structure determinants in advanced nation is still ongoing and far from certain.

Booth et al (2001) demonstrate how firms in developing and developed countries share the same important variables in their capital structure determinant. However, they also documented significant differences among ten developing countries which they attribute to different institutional factors such as the rule of law and tax framework. Nonetheless, the paper also documents on how profitability consistently has a negative relationship with leverage levels, thereby providing support for the pecking order theory in developing countries.

On the other hand, Desai et al (2001) demonstrate how leverage has a consistent positive relationship with tax rates across different developing countries country-specific factors. This lends support to the trade-off theory since the positive relationship highlights the interest tax shield benefits versus leverage related costs balance. However, Desai et al (2001) also notes that multinational corporations (MNCs) tend to favour internal capital markets.[148] Fan et al (2012) supports the findings of Desai et al (2001) more than a decade later when they demonstrate how firms in developed and developing countries tend to have higher leverage when the tax gain benefits (including interest tax shields) are higher. This suggests support for the trade-off theory in emerging economies. However, Fan et al (2012) contribute to a deeper understanding into the contribution of institutional factors to the firm's capital structure. Specifically, firms tend to prefer more debt in countries where corruption is high and vice versa. The existence of a bankruptcy code, as well as deposit insurance also tends to increase leverage levels in firms in that particular country.

Aside from debating from the theoretical point of view, the three previous papers on capital structures of firms in emerging economies have iterated the importance of institutional factors as a determinant of capital structure. However, Chui et al (2001) argue that institutional factors are only half of the picture, they argue that national culture is also an integral part of the capital structure variations in emerging economies. By using the cultural dimensions of values developed by Schwartz (1994), the paper was able to demonstrate how the capital structure of firms in nations that are more conservative tend to have a lower level of debt compared to nations with a more liberal national culture. However, papers such as De Jong et al (2008) remind us of how much is still unknown about the determinants of capital structure in developing countries. The paper shows evidence that capital structure factors may not be homogenous among developing countries, in direct contrast to the findings of previous studies

Empirical Evidence in Malaysian Context

In the case of Malaysia, many studies try to document the determinants of capital structure with mixed results. Some studies such as Baharuddin et al (2011) exhibit a negative relationship between

[148] A situation that occurs when a subsidiary company borrows from its parent company, when the external capital market in which the subsidiary operates is severely underdeveloped or has limited creditor rights.

profitability and leverage levels, and a positive relationship among size, growth opportunities and assets with leverage levels. These findings are also supported by Ting and Lean (2011) where profitability is recorded to have a negative relationship with leverage levels amongst both government-linked companies (GLCs) and non-GLCs. However, their results suggest a negative relationship between size and leverage amongst GLCs, in contrasts with Baharuddin et al (2011). Wahab and Ramli (2014) however, demonstrate how profitability indeed has a negative relationship with leverage, but it is not statistically significant, which suggest that weak pecking order behaviour may exist among Malaysian firms. They however, confirm that traditional determinants of capital structure, such as interest rates, liquidity and tangibility are significant determinants of capital structure.

There are a number of papers that focused on specific aspects of capital structure behaviour. Studies such as Haron and Ibrahim (2012) and Ting (2016) focus on determining whether a target capital structure exists among Malaysian publicly listed firms. They confirm that there exists a target capital ratio. Furthermore, Haron and Ibrahim (2012) estimated an extremely high SOA of 60.13%, which means that firms closes the gap between their current capital structure position to the optimum position in 1.66 years, which is surprising since rapid capital structure adjustments is known to have high transaction costs. Ting (2016) however, estimated a more conservative 21%-26% SOA. Finally, Saad (2010) hypothesizes a relationship between corporate governance and capital structure since Malaysia's corporate governance steadily improved throughout the years. Their results suggest that the relationship between corporate governance and capital structure is inconclusive and further research may be required in this area.

Methodology

Data Description

The Malaysian Shariah compliant firm is a firm that have undergone Shariah stock screening procedure that is independently undertaken by the Malaysian Securities Commission's Shariah Advisory Council. The Shariah stock screening methodology was first established in 1997 which was then updated into the two-tier Shariah stock screening methodology in November 2013. The current version involves firstly the screening of all publicly-listed firms in Bursa Malaysia for their business activities. The contribution of Shariah non-compliant activities (such as conventional banking and insurance, pork, gambling and alcohol) to the total revenue and profit before tax of the firm should not exceed 5%. Whilst an exception were made towards share trading, stock broking and rental received from Shariah non-compliant sources all of which is allowed a maximum contribution of 20%. This is formed as a first tier of Shariah stock screening methodology. The second tier involves screening the capital sources of the firms. A Shariah-compliant firm should not have more than 33% of its funding and savings in conventional debt.

We first comprehensively mapped out all firms from the inception of the Shariah-stock screening methodology in 1997 to 2016. We then sort these firms into five different groups of Shariah compliancy. The groups consist of 100%, 75%, 50%, 25% and 0% Shariah compliant. Firms in the 100% Shariah compliancy group consists of firms who have uninterrupted Shariah compliancy status from the start of the Shariah Stock Screening filter till current day, that is from 1997 to 2016. Firms who are in the 75%, 50% and 25% Shariah compliancy group are only Shariah compliant 75%, 50% and 25% of the time between 1997 to 2016 respectively. The last group, 0% Shariah compliancy group, is a special sample of firms who have never been Shariah compliant from 1997 to 2016, their capital structure behaviour is particularly important to us as they are polar opposites to Shariah compliant firms.[149] Our above methodology and classifications thus yield the following distribution of firms in Figure 1. The figure shows that a significant

[149] We sort our firms in this particular way due to the fact that a majority of Malaysian Shariah compliant firms routinely gain their Shariah compliancy status, only to lose it in a number of years, and regain it much later. These intermittent gain and loss of Shariah compliancy status meant that any analysis of Shariah compliant and Shariah non-compliant firms is far from straightforward. Instead, it is our opinion that firms should be classified into different groups that reflect the firm's cumulative Shariah compliancy status across time as per our earlier definition.

number of Malaysian firms actually have uninterrupted Shariah compliancy status. This is consistent to the fact that majority of Malaysia listed firms are Shariah compliance.[150]

Table 1 describes the summary statistics for all of our main variables. It is evident that book debt amongst Shariah-compliant firms tends to be relatively low in terms of mean and volatility. This is in line with the view that Shariah-compliant firms and institutions tend to be more risk averse and conservative in their debt policy. Market Debt on the other hand has a higher mean and almost double the volatility relative to Book Debt. This could be due to the fact that the inclusion of market equity in the calculation of market debt causes market debt to be a function of volatile floated public shares.

All the firm specific variables such as Sales, CAPEX, Tangibility, Operating Income before Depreciation (OIBD), Effective Tax Rate and RandD Expenses are relatively low in volatility, reflecting the conservative nature of Shariah compliant firms. Only the Q ratio is significantly higher in volatility amongst the firm-specific factors. Again this may be attributed to the inclusion of market equity in the calculation of the Q-ratio. Market timing variables such as the EFWAMB, Hot Debt and Equity Market and the Equity Risk Premium (ERP) on the other hand suffers significantly high volatility compared to firm-specific variables, particularly for the EFWAMB. Only the implied ERP seemed to have a low volatility for the entire duration of the study. The unstableness of the market timing variables reflects the fundamental flaws of each variable. It is well known in studies such Hovakimian et al (2003), Hovakimian (2006) and Alti (2006) that market timing variables suffer from statistical bias and limitations, as well as inferential problems. Suffice to say that we rely on previous literatures' methodology of calculating these variables in order to assess market timing behaviour of Shariah-compliant firms' capital structure. Lastly, the pecking order variables such as the OIBD and the Financing Deficits are shown to have low volatility throughout our study.

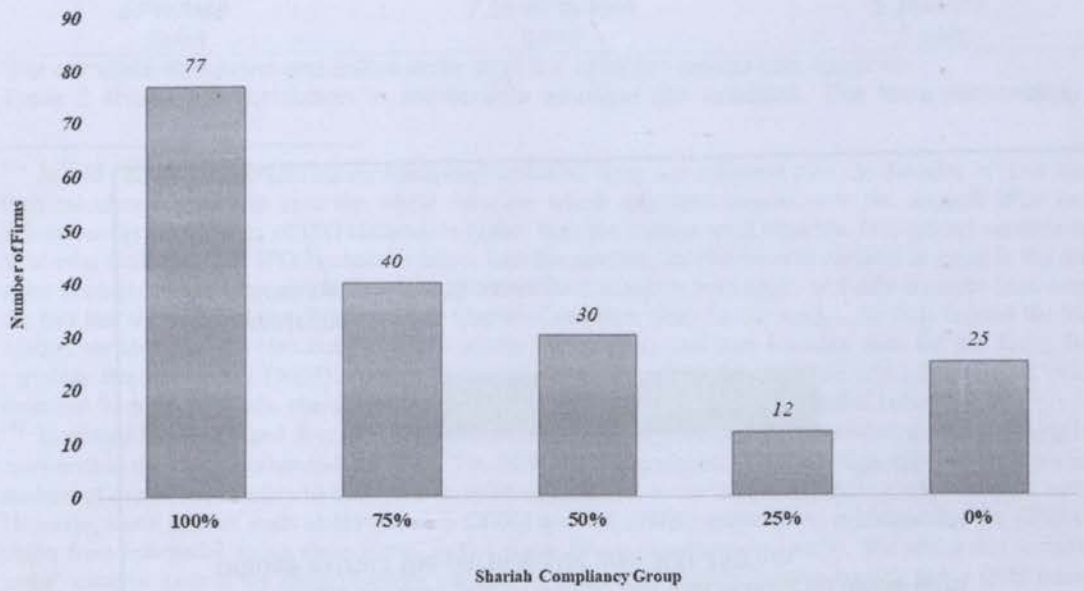

Figure 1: Distribution of firms across Shariah compliancy groups

Table 1 – Summary Statistics.* Book debt is defined as long term debt plus preferred stock divided by total assets. Market debt is defined as total liabilities divided by total liabilities plus market equity (outstanding shares multiplied by current share price). CAPEX, Tangibility (Net Plant, Property and

[150] On average 70% to 80% firms with more than 60% market capitalisation are listed as Shariah compliance firms yearly since 1997 to 2016.

Equipment), OIBD, Sales and RandD Expenses are the respective variables scaled to the firm's total assets. GDP is defined as real GDP growth rate (nominal annual GDP growth rate minus inflation rate). The Q-Ratio is defined as the market value of equity plus the book value of debt, the value of which is divided by total assets. The Effective Tax Rate is defined as total income tax divided by the pre-tax income. Financing deficit is defined as the difference between the change in assets and the change in retained earnings, the value of which is divided by the beginning of the year total assets. The variable Hot Debt Market and Hot Equity Market is a variation of the Hot-Market variable utilised in Alti (2006).[151] EFWAMB is the external financing weighted average market-to-book ratio.[152] The ERP is the equity risk premium.[153]

Variable	Mean	Standard Deviation
Book Debt	0.00970	0.104
Market Debt	0.475	0.239
CAPEX	0.0419	0.0428
Tangibility	0.400	0.201
GDP	0.0211	0.176
OIBD	0.102	0.0740
Financing Deficit	0.645	0.106
Hot Debt Market	0.582	0.493
Hot Equity Market	0.531	0.499
Q-Ratio	0.845	0.719
Effective Tax Rate	0.244	0.421
RandD Expenses	0.914	0.280
Equity Risk Premium	0.0178	0.0148
EFWAMB	7.281579x10^6	2.35x10^7
Sales	0.812	0.440

*For complete definitions and calculations of all the variables please see Appendix

Table 2 shows the correlation in movements amongst our variables. The table demonstrates some

[151] In Alti (2006), total IPOs (Equity issuances) across all firms are collected over the duration of their study. They then calculate the median over the whole duration, which they then impose over the original IPOs time series. Whenever the actual level of IPO issuance is higher than the median level, then the Hot-market variable is set at 1. When the actual level of IPO issuance is lesser than the median, the Hot-market variable is set at 0. We employ the exact same procedure in our study, however, since we have access to both equity and debt issuance (and coupled with the fact that there were little IPOs amongst Shariah-Compliant firms in our study), we thus formed the Hot Equity Market variable and the Hot Debt Market variable using equity and debt issuance data for our firms. Both these variables strengthen Alti (2006)'s use of Hot-market variable which have the distinct advantage of being totally detached from firm-specific characteristics that ultimately reduce the risk of inferential issues.

[152] Introduced by Baker and Wurgler (2002) whom argues that it is a better measurement of market timing behaviour compared to the usual market-to-book ratio. The EFWAMB is designed to attain a high value when firms issue large amount of securities, relative to their past cumulative issuance, at the time when their market-to-book ratio is high. However, some authors such as Hovakimian (2006) and Alti (2006) demonstrate evidence that the EFWAMB may suffer from inferential issues since it may in fact signal future growth opportunities. We utilise this variable despite some concerns as it is the most common variable of choice for Market Timing studies and it does possess some efficacy despite the criticism.

[153] ERP is pioneered by Damodaran (2016). It is a variable that measures the difference in risks and subsequently the returns required between a corporate's safe debt and its risky equity. The ERP can be categorised as historical ERP, implied ERP and survey ERP. According to Damodaran (2016), the Implied ERP is preferred over the other categories due to the fact that the risk premium borne by equity is a direct result of future uncertainties inherent in equity. Therefore, implied ERP, which is calculated by future forecasts of the firm's performance, is a better estimate of the ERP since it is forward looking compared to the historical ERP which is calculated by ex-post performance of the firm which makes it more backward looking. We therefore utilise the implied ERP in our study.

intriguing correlations amongst our variables. Notably, Hot market for Debt and Equity seem to follow the movements of the ERP. Since the Hot Debt and Equity market variable signals over average debt or equity issuance, their strong positive correlation with the ERP suggests a deeper relationship between them. Book Debt and Market Debt seem to have relatively strong correlation with two different variables of the Pecking Order Theory. Book Debt shares some movements with Financing Deficits, whilst Market Debt shares some movements with the OIBD. Lastly, Real economic growth as proxy by the Real GDP growth shares a correlation with the Hot Debt or Equity Market, indicating a trend for firms to issue over or under average quantities of financial securities when the overall economy is bullish or bearish.

Model Specification

We begin our analysis with the specification of our model that has been adapted from Rajan and Zingales (1995), Flannery and Rangan (2004), Alti (2006) and Lemmon, Roberts and Zender (2008). We intend to regress the following model first with the Fixed Effects Regression and subsequently with Dynamic GMM Regression.

$$Y_t = Y_{t-1} + EFWAMB_{t-1} + ERP_{t-1} + HotEq_t + HotDebt_t + X_{t-1} + u_t + \eta_i \qquad (1)$$

Where, Y_t are four different measures of leverage as defined by previous literatures. They include the change in Book and Market leverage, as well as level Book and Market Leverage. It is acknowledged in the literature that there exists no single measurements of leverage that can suit all capital structure analysis (Graham and Leary, 2011). Different measurements of leverage could lead to different results. We therefore utilise the aforementioned four most common measurements of leverage to obtain robustness in our results

The variable X_{t-1} are a collection of the "usual" determinants of leverage as established by previous literatures such as Rajan and Zingales (1995), Flannery and Rangan (2003), Hovakimian et al (2003) and Fama and French (2002). They include Sales, CAPEX, Tangibility, the Q-Ratio, OIBD (which is also known as Profitability), Effective Corporate Tax Rate, Financing Deficit and the RandD Expenses. It is crucial that these variables be included in our regression since including them would minimise the likelihood of model misspecification. EFWAMB, ERP, Hot Equity Market and Hot Debt Market follows the same definitions previously mentioned.

Lastly, we include the time-invariant firm fixed effects, measured by the variable η_i, since it has been shown by Flannery and Rangan (2004) as well as Lemmon, Roberts and Zender (2008) that firm fixed effects may in fact be a crucial determinant of capital structure variation. Therefore, including them in our model is crucial to avoid the pitfalls of model misspecification.

The focus of our model is to observe the market timing variables (EFWAMB, ERP and both the Hot-Market variable for Equity and Debt) as well as the pecking order variables (OIBD and Financing Deficit). If they are significant with correct signs, then it serves as evidence of market timing behaviour and/or pecking order behaviour amongst Shariah-compliant firms. We also investigate the significance of the traditional determinants of capital structure to see if they hold water. Lastly, we pay extra attention to the lagged dependent variable as it allows us to discover whether a target capital ratio exists, and whether the SOA towards the target capital ratio is significantly fast or not.

	Sales	EFWAMB	Capex	tang	GDP	OIBD	Financing Def.	Hot Debt	Hot Equity	Q	Tax	RDD	R&
Sales	1.0000												
EFWAMB	0.0950	1.0000											
Capex	0.0600	-0.1232	1.0000										
tang	-0.1778	-0.1298	0.2906	1.0000									
GDP	-0.0120	-0.0213	-0.0031	0.0191	1.0000								
OIBD	0.2081	-0.0331	0.2388	0.0681	-0.0369	1.0000							
Financing Def.	-0.0254	-0.0013	0.1378	-0.0545	0.0388	0.0354	1.0000						
Hot Debt	0.0800	-0.0113	-0.0399	-0.0902	0.2054	0.0153	0.0306	1.0000					
Hot Equity	0.0556	-0.0093	-0.0165	-0.0543	0.1321	-0.0259	0.0723	0.4281	1.0000				
Q	0.2661	0.0465	0.2713	0.1121	0.0048	0.4110	0.0094	-0.0058	-0.0200	1.0000			
Tax	-0.0222	0.0353	-0.0025	-0.1000	0.0197	-0.0641	0.0569	0.0051	0.0630	-0.0548	1.0000		
RDD	-0.0919	0.0540	-0.1297	-0.0151	0.2820	-0.1593	0.0435	0.0541	0.0607	-0.0748	0.0257	1.0000	
R&D Expenses	-0.0389	-0.0348	0.0101	-0.0538	0.0195	0.0410	-0.0385	0.0205	0.0129	-0.0317	-0.0070	-0.3664	1
ERP	0.0656	-0.0058	-0.0519	-0.0792	-0.2286	0.0031	0.0531	0.5982	0.3217	-0.0192	0.0180	-0.0574	0
Book Debt	-0.0931	-0.0199	0.2189	-0.0216	0.0048	-0.0943	0.4814	-0.0223	0.0247	0.0215	0.0798	0.0048	-0
MktDebt	-0.0919	-0.0955	-0.2406	0.0558	0.0524	-0.3282	0.0079	-0.0019	0.0077	-0.4993	0.0321	0.1592	-0
Financing Def.	-0.0254	-0.0013	0.1378	-0.0545	0.0388	0.0354	1.0000	0.0306	0.0723	0.0094	0.0569	0.0435	-0

Results and Discussions

We first begin our discussion of our findings from the results of the 100% Shariah compliancy group, for they represent our main interest in this study, in Table 3 and 4 below. We then move on to discuss the regressions of the other different Shariah compliancy group in Tables 5, 6, 7 and 8. We employ four different dependent variables, Book Leverage and Market Leverage, both of which are at its original level (it has not been differenced), and the first difference of Book Leverage and Market Leverage expressed as a fraction of the firm's total assets.

Efficacy of the Market Timing Hypothesis

Table 3 demonstrates how market timing variables EFWAMB, Hot Market for debt and equity and the ERP holds little explanation across all four measurements of leverage. EFWAMB, the bulwark of the Market Timing Hypothesis, is not significant in all four of our models. The coefficient it has is also extremely small. This may suggest that the effects of the EFWAMB on Shariah-compliant firm's capital structure are statistically and economically insignificant. This perhaps reflects the fundamental flaws in the EFWAMB in terms of its calculation and also its self-imposed overlimitation. For example, in the calculation of the EFWAMB, all values less than zero or more than 10 will be forced to be set at zero. This leads to the diminution of the effects of the EFWAMB has on the firm's capital structure. In any case, the EFWAMB could not provide evidence for the market timing hypothesis in our study. Next we see that the case is similar for the ERP and the Hot Market for debt and equity. All four of our models show that these variables are not significant, with the exception of the Hot market for debt being statistically significant but its coefficient is relatively small at just under -0.02% making it almost economically irrelevant.

Pecking Order Variables

We are able to observe from Table 3 that pecking order variables have mixed results. Only for the first differenced book leverage and the level market leverage have significant pecking order variables for them. When they are significant, pecking order variables have a mixed consequence towards leverage. OIBD has a strong positive relationship with the first differenced book leverage which offers significant evidence against the pecking order theory, since a higher OIBD should impiy a higher profitability which should contribute to a higher accumulation of financial slack which subsequently reduce the firm's need to raise debt in order to meet their investment needs and yet our results suggest the exact opposite relationship, a higher OIBD results in a significant increase in debt. However, OIBD changes to a mild negative coefficient when it is used as an independent variable for level market leverage. However, we must be careful when interpreting the coefficient of independent variables when we utilise the fixed effect regressions since it tends to underestimate the coefficient of independent variables. For this reason, we tend to accept the larger and more significant positive coefficient under the first differenced book leverage.

We then see that the Financing Deficit variable also tend to be significant for both the first differenced book leverage and the level market leverage. In this case however, both the model show consistently negative coefficient although they vary greatly in magnitude. This is a curious finding for it suggests that when Shariah-compliant firms are facing greater financing deficit, they tend to reduce their leverage levels. Could this suggest that Shariah-

Table 3
Fixed Effect Estimation from the 100% Shariah Compliancy Group

Variables	Book Leverage	ΔBook Leverage	Market Leverage	ΔMarket Leverage
$Sales_{t-1}$	-0.00468	-1.46***	-0.0451***	-0.0379***
	(0.652)	(0.001)	(0.002)	(0.015)
$EFWAMB_{t-1}$	$-1.74x10^{-11}$	$4.84x10^{-9}$	$3.61x10^{-10}$	$4.07x10^{-10}$

	(0.950)	(0.705)	(0.357)	(0.327)
$CAPEX_{t-1}$	0.239***	-8.805***	0.0247	-0.0260
	(0.000)	(0.002)	(0.779)	(0.786)
$Tang_{t-1}$	-0.0286	1.182	0.0893***	0.0262
	(0.204)	(0.204)	(0.005)	(0.425)
GDP_{t-1}	--0.109***	-2.143***	0.243***	0.312***
	(0.000)	(0.003)	(0.000)	(0.000)
$OIBD_{t-1}$	0.0142	3.867***	-0.125***	-0.0338
	(0.699)	(0.000)	(0.017)	(0.572)
DEF_{t-1}	0.000231	-3.44***	-0.0369***	-0.0314
	(0.983)	(0.001)	(0.042)	(0.375)
$Hot\ Debt\ Mkt_{t-1}$	-0.0191***	-0.232	-0.00604	-0.00876
	(0.001)	(0.400)	(0.470)	(0.321)
$Hot\ Eq\ Mkt_{t-1}$	-0.00299	0.126	0.005	0.00347
	(0.525)	(0.550)	(0.452)	(0.618)
Q_{t-1}	-0.00159	-1.183***	0.0317***	0.0768***
	(0.753)	(0.000)	(0.000)	(0.000)
$Tax\ Rate_{t-1}$	-0.00662	0.0303	0.00613	0.00694
	(0.171)	(0.896)	(0.367)	(0.354)
RDD_{t-1}	0.00197	-1.528***	-0.0292	-0.00926
	(0.924)	(0.039)	(0.327)	(0.764)
$RandD\ Expense_{t-1}$	$-4.26\text{x}10^{-14}$	$2.98\text{x}10^{-12}$	$3.71\text{x}\ 10^{-13}$***	$4.49\text{x}10^{-13}$***
	(0.696)	(0.526)	(0.006)	(0.003)
ERP_{t-1}	0.204	8.236	0.301	0.407
	(0.285)	(0.356)	(0.269)	(0.158)
$Leverage_{t-1}$	0.770***	4.167***	0.699***	0.198***
	(0.000)	(0.000)	(0.000)	(0.000)
η	0.627***	-0.268	0.134***	-0.0602***
	(0.012)	(0.772)	(0.000)	(0.109)
R-Squared	0.623	0.329	0.470	0.135

Figures in parentheses indicates P-values.
*** indicates significance at 1% confidence level
* indicates significance at 10% confidence level

compliant firms tend to fund their financing deficit with more equity rather than debt? Or could it suggest that Shariah-compliant firms tend to reduce the financing deficit itself (i.e cut investments into projects) rather than taking on more debt? Further research is warranted in this area.

Firm-Specific Variables

Interestingly, Sales show a consistently negative relationship in all four models, with three of them being significant. This is against the intuition that with more sales, the firm's taxable income would increase which increases the interest tax shield incentives which ultimately entice the firm to take up more debt. It could suggest that Shariah-compliant firms tend to accumulate financial slack over time and release them when they are facing financial deficit, thus, more sales leads to lesser need of leverage across time. This is supported by the mildly negative relationship we see between Sales and leverage.

Next we see that CAPEX, Tangibility and the Q-ratio have a mixed relationship in our results. We see also that the RandD Expenses have a mildly consistent positive relationship with leverage, suggesting that Shariah-compliant firms fund their research and development expenses with leverage, however, it must be noted that the coefficient is so miniscule that it verges on being economically irrelevant.

Lastly, it is interesting to note that the effective tax rate bears no significant relationship with all four leverage models since it is the pillar of the Trade-Off Theory. Could this suggest that firms are not enticed by the interest tax shield benefits offered by debt and higher taxes?

Firm Fixed Effects

In 3 out of 4 of our models, firm fixed effects, η, are significant and with a consistently positive relationship with leverage (except for the last model with first differenced market leverage, however the coefficient is only mildly negative, the underestimation of firm fixed effects regression may cause a bias in the coefficient, and the coefficient might me mildly positive after all). Our results concur with the findings of Flannery and Rangan (2004) and Lemmon, Roberts and Zender (2008) to name a few of the existing literature that give support for Firm fixed effects as an explanator of capital structure variation.

However, we must be careful with the interpretation of this finding. The majority of the previous literature attribute this significant fixed effects in capital structure variation to an essential but unobservable salient characteristics of the firm which is totally time invariant. However, DeAngelo and Roll (2015) made the argument that if the range at which leverage levels fluctuated within each firms are large, and these fluctuations are observed over a long period of time, then a significant firm fixed effect in panel regressions may simply signal reliable differences among firms in their time-series average leverage calculated across all years. Thus, we must remain cautious in our inferences stemming from the significant firm fixed effects observed in our results.

Target Leverage and the Speed of Adjustments (SOA)

Our results show evidence that the Shariah-compliant firms do indeed have a Target capital ratio as evidenced by the consistently significant lagged dependent variable in all four of our models. Furthermore, the coefficient of the lagged dependent variable for both level book leverage and market leverage suggested a SOA of roughly 23% to 30%, which is relatively fast compared to studies such as Huang and Ritter (2004) who estimates a much lower SOA.

This existence of the Target capital ratio imply that Shariah-compliant firms make incremental changes in their capital structure to arrive, in time, at their optimal capital structure that maximises the value of the interest tax shield and subsequently the value of the firm. The 30% SOA suggests that Shariah-compliant firms reduced the gap between their current sub-optimal capital structure to an optimum one by 30% per year. This means that the firm's capital structure has a half-life of less than 2 years, and would reach it's optimum point, if all else remain the same, by year 3.

This relatively fast SOA provide much support for the Trade-Off Theory since it does not allow other forces such as the Market Timing and Pecking Order behaviours to interrupt the firm's adjustments towards its optimum capital structure. However, it must be noted that since we utilise the firm fixed effects regressions, there may exists significant bias in the coefficient of the lagged dependent variable stemming from the lagged dependent variable being correlated with the error term. Fundamentally, this issue arises from the relatively endogenous nature of our independent variables. To address this issue, we employ the System Generalised Method of Moments (GMM) to help us resolve the issue of endogeneity amongst our independent variables. Table 4 illustrates our results using the System GMM.

Table 4
System GMM Estimation of the 100% Shariah Compliancy Group

Variables	Book Leverage	Market Leverage
$Leverage_{t-1}$	0.313***	0.185*
	(0.016)	(0.102)

AR(1)/AR(2)	0.077/0.538	0.068/0.516
Hansen Test	0.129	0.733
No of Instruments/Groups	57/77	57/77

Figures in parentheses indicate p-values.
*** indicates significance at 1% confidence level
* indicates significance at 10% confidence level

Three diagnostics tests must be done on any model that utilises the GMM techniques for its estimations in order to avoid the issue of autocorrelation in the second order as well as the issue of the instrumental variable being correlated with the error term, both of these issues will cause biasness in the coefficient of the lagged dependent variable as well as the coefficient of the other independent variables. The three diagnostic tests begins with the number of instrumental variables must not be more than the number of groups. Secondly, the Arellano and Bond (1991) test AR(2) Null Hypothesis of no second order correlation must be accepted, and lastly, the Hansen J-Test's Null Hypothesis that the Instrumental variables are uncorrelated with the error term must also be accepted (i.e both the AR(2) and Hansen J-Test must have a P-value of more than 0.005). (Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998). We can observe that both our models of level book and market leverage pass all three diagnostic tests and therefore the coefficients of their lagged dependent variable should be statistically valid.[154]

It is interesting to note that the consistent coefficients of the lagged dependent variables suggested by System GMM are much lower than what is demonstrated by firm fixed effects regressions. This leads to the SOA of Shariah-compliant firm's capital structure to increase by more than twofold, from 23% to 30% to 68.7% to 81.5%. However, we must note that market leverage's coefficient of the lagged dependent variable is barely significant at a p-value of 0.102, this suggest that the magnitude of the coefficient of the lagged dependent variable tethers on the brink of insignificance, and therefore, we should not make judgements based on it.

However, even if we take the most conservative figure suggested by System GMM, 68.7%, and firm fixed effects regressions, 23%, and we calculate the average between the two, we still arrive at a hefty SOA of 45.85% which would suggest that the Shariah-compliant firm reduces the gap between their current suboptimal capital structure to the optimum one by 45.85% per year, suggesting a half-life of a little more than 1 year.

Comparisons across Different Shariah Compliancy Groups

Next we utilise the firms in the different Shariah compliancy groups to form our 75%, 50%, 25% and 0% sample. Table 5 to 8 illustrate the results of our regressions.[155] One of our most important findings is that across all groups, market leverage (whether it is level form or first-differenced form) have more explanatory power in general, in terms of R-Square and significance of the explanatory variable, compared to Book Leverage. This finding is parallel to other studies such as Graham and Leary (2011) who observed the same results in their study. Our results thus suggest that future studies into Shariah compliant and non-compliant firms should prioritise Market Leverage over Book Leverage in their analysis.

A cursory glance through Table 5 to 8 reveals an imperative finding; different Shariah compliancy groups have significantly different capital structure behaviour even after we control for firm specific variables. In our opinion, since we have included firm specific factors sourced from Rajan and Zingales (1995) and Fama and French (2002), heteregonous industry characteristics should have been controlled for and thus

[154] Note that due to the nature of the first differenced book leverage and market leverage, they consistently could not pass the AR(2) autocorrelation of the second order diagnostic tests, we have therefore excluded them from Table 4.
[155] Table 5 (Book Leverage), Table 6 (Market Leverage), Table 7 (Change in Book Leverage) and Table 8 (Change in Market Leverage).

cannot explain the differences in capital structure behaviour across Shariah compliancy group. Therefore, studying capital structure behaviour amongst different Shariah compliancy groups contribute an additional avenue of depth into capital structure studies.

From the market timing hypothesis point of view, we are able to document a moderate trend whereby as we move from the 100% Shariah compliancy group to the 0% Shariah compliancy group, market timing variables become more and more significant with the direction of the variables being concurrent with the prediction of the market timing hypothesis. This is seen in Table 5, 7 and 8 whereby the variable EFWAMB progressively turns negative and significant as we shift in a descending order through the Shariah compliancy group.

We can also observe how the direction of the Hot Debt Market variable also turns positive as we descend the Shariah compliancy group across Table 5 to 8. Although only Table 8 records a significant positive contribution of the Hot Debt market variable for the 0% Shariah compliancy group whilst Table 7 records a near significant positive relationship for the 0% Shariah compliancy group, the consistency in the change of direction of the Hot Debt market variable suggest this trend exists but may not be strong enough to be statistically significant.

To a lesser extent we also document the variable ERP getting larger and larger in magnitude with the correct direction as we descend the Shariah compliancy group. In Table 5, 6 and 8, ERP is seen to have a relatively small magnitude for it's coefficient at first, only to grow larger as we move towards the lower groups of Shariah compliancy, although only Table 7 and 8 document a significant relationship. However, we must note that the 0% Shariah compliancy group consistently have a negative relationship between ERP and all four leverage levels. This is against the prediction of the market timing hypothesis and remains an area of research in the future.

Our previous observations and comparisons of market timing behaviour among different Shariah compliancy group yielded a moderate trend whereby as we descend the Shariah compliancy Group, that is as we shift our analysis from firms who are consistently Shariah compliant to firms who are intermittently Shariah compliant and finally to firms who are consistently Shariah non-compliant, we observe a stronger and stronger evidence of the existence of market timing behaviour.

Why do Shariah non-compliant firm exhibit stronger market timing behaviour compared to Shariah compliant firms? One important point to note is that Shariah non-compliant firms do not face any constraints in terms of their types of funding. Where a Shariah compliant firm, by definition, may only have its debt financing from conventional sources up to 33%, the Shariah non-compliant firm faces no such restriction. The liberation of this restriction possibly leads to Shariah non-compliant firms to time their securities issuance to external capital markets.

From the pecking order theory's perspectives we observe mixed results amongst all four definitions of leverage and across all Shariah compliancy group. Firstly, we can document a consistently negative and mostly significant relationship between Sales and Leverage levels, although we must be careful in interpreting Sales' role in capital structure behaviour. This is because a firm with higher sales may be a larger firm which indicates maturity and thus cash flow stability which the trade-off theory then predicts a higher level of debt, and therefore it predicts a positive relationship between Sales and leverage levels. However, the pecking order theory predicts a higher level of retained earnings with higher Sales and therefore the firm should be less reliant on external debt and therefore a negative relationship between Sales and Leverage levels should exist. In our results, we document an undoubtedly negative relationship between Sales and all four definition of Leverage across all Shariah compliancy groups. We therefore attribute this result to the pecking order theory over the trade-off theory.

In contrast, the variables OIBD and Positive Financing Deficit, DEF, both being the leading variables for the pecking order theory exhibit mixed results across the Shariah compliancy group. In Table 5 through to Table 8, we observe erratic change in direction and magnitude for both OIBD and DEF. Specific focus should be given to table 5.2 where a mildly consistent and significant negative relationship for OIBD

appears to exists, providing support for the pecking order theory. In the same table however, DEF also exhibited consistently and significantly negative relationship with leverage levels, which implies counter evidence to the credibility of the pecking order theory.

Just as it was in the earlier case for the 100% Shariah compliant group's analysis, pecking order variables have overtly mixed results and do not provide evidence of a strong pecking order behaviour amongst the Shariah compliancy group. We therefore conclude that there may exists pecking order behaviour for certain firms in certain Shariah compliant groups in certain times, however on average, the pecking order behaviour is less dominant than the other two main competing theories of capital structure studies.

In the perspective of the trade-off theory, our most significant finding is that across all definition of leverage and across all groups of Shariah compliancy, the lagged dependent variable is consistently significant with variations in magnitude. This implies the existence of a target capital ratio for all groups of Shariah compliancy which entails that all Malaysian firms partially adjust their capital structure to arrive at the target capital ratio in the future. This by itself is a huge boon to the trade-off theory in its competition against the other competing theories.

Notwithstanding the fact that the lagged dependent variable is consistently significant, we also discovered significantly high SOA for our level leverage levels. Caution must be taken in interpreting the coefficient of the lagged dependent variable in our fixed effect regressions, since dynamic fixed effect regressions is known to produce biasness in the coefficient of the lagged dependent variable known as the Nickell Bias in Nickell (1981).

However, our earlier analysis, on the 100% Shariah compliant group utilising Dynamic System GMM in order to arrive at a consistent coefficient of the lagged dependent variable, suggest an even higher SOA compared to the previously estimated SOA made by Dynamic Fixed effects regressions. Therefore, we opined that we have reasonable grounds to assume that the SOA we observe across the Shariah compliancy group are in fact underestimated, or in other words, face a downward bias. Thus, the true SOA should be even higher than the ones we observe below.

We observe that there exists a trend of increasing SOA as we descend the Shariah compliancy group. For the case of Book leverage, we observe that the SOA starts at relatively low pace of 23% for the 100% Shariah compliant group and steadily increases to 61.6% for the 0% Shariah compliant group. This result is similar for Market leverage where the SOA starts at 30% for the 100% Shariah compliant group and gradually increases to 51% for the 0% Shariah compliant group. Our results are consistent with the findings of Haron and Ibrahim (2012) and Ting (2016)

Finally, we document a number of consistently significant firm specific variables across all groups of Shariah compliancy; as mentioned before, Sales is consistently negative, CAPEX is consistently positive and tangibility is consistently positive. Our results are in line with Ting (2011).

Conclusion

This paper aims to investigate and compare the capital structure behaviour of various degrees of Shariah compliant firms as well as Shariah non-Compliant firms. By using the Malaysian stock market which is arguably as one of the most developed Shariah screened stock market models in the world, we are able exhaustively map out all Shariah compliant firms and group them into five different and descending groups of Shariah compliancy. Our results suggest that the market timing hypothesis and its variables holds little explanatory power over the capital structure variation of 100% Shariah-compliant firms. This is deduced from the fact that all market timing variables, namely the EFWAMB, ERP and the Hot Market for Debt and Equity, all show consistently non-significance across all definitions of leverage. Thus, our study provides strong arguments against enduring Shariah-compliant firms timing their securities issuance to external capital market conditions. The same could be said for pecking order variables which although do show consistent significance, the direction and magnitude of their coefficient goes against the

theoretical predictions. Effectively, they show weak, if not irrelevant, pecking order behaviour amongst 100% Shariah compliant firms. Furthermore, we note a significantly high SOA with the most conservative estimation suggesting an SOA of between 23% to 68.7%. The existence of the target capital ratio and a fast SOA serves as a significant evidence for the trade-off theory among 100% Shariah-compliant firms. With the insignificance of market timing variables and the irrelevance of pecking order behaviour, coupled with strong evidence in support of the optimal capital structure, we conclude that the longest surviving Shariah-compliant firms follow the trade-off theory in terms of their capital structure behaviour.

We then compare the above findings of 100% Shariah compliant firms to firms who are intermittently Shariah compliant (75%, 50% and 25% of the time between 1997 and 2016) as well as firms who are consistently Shariah non-compliant for the entire duration of the study. Firstly, our results suggest a moderate trend whereby as we descend the Shariah compliancy groups, we discover stronger and stronger evidence of market timing behaviour being practiced. Secondly, we observe that pecking order variables exhibited mixed results across all the Shariah compiancy group. We therefore conclude that the efficacy of the pecking order theory is ambiguous across all Shariah compliancy group as it is on the 100% Shariah compliant firms. Finally, we discover that as we descend the Shariah compliancy group, the SOA gradually increases, implying that non-Shariah compliant firms adjust faster than their Shariah compliant firms' counterpart. Since our paper concludes that there exist significant differences in capital structure behaviour as we descend the Shariah compliancy group, we are then provoked to wonder whether the investment and dividend policy of these groups would differ as well. It is certainly an area of study that has not received much light.

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Table 5 – Direction of variables across different Shariah-Compliant Groups.

	Book Leverage				
Variables	100%	75%	50%	25%	0%
$Sales_{t-1}$	-0.00468	-0.0360***	-0.0138	-0.00218	-0.175**
	(0.652)	(0.003)	(0.179)	(0.951)	(0.088)
$EFWAMB_{t-1}$	$-1.74x10^{-11}$	$-1.39x10^{06}$	0.000343	-0.107	-0.000441***
	(0.950)	(0.256)	(0.705)	(0.362)	(0.05)
$CAPEX_{t-1}$	0.239***	0.102	0.213**	0.0174	0.626
	(0.000)	(0.169)	(0.058)	(0.932)	(0.563)
$Tang_{t-1}$	-0.0286	-0.0318	0.0699***	0.0880**	-0.105***
	(0.204)	(0.292)	(0.022)	(0.073)	(0.003)
GDP_{t-1}	--0.109***	-0.196	0.0290	-0.0380	0.0413
	(0.000)	(0.565)	(0.728)	(0.524)	(0.167)
$OIBD_{t-1}$	0.0142	-0.00755	-0.0338*	0.0995	0.0451
	(0.699)	(0.687)	(0.118)	(0.408)	(0.391)
DEF_{t-1}	0.000231	0.006	-0.00620	-0.0105	-0.00454
	(0.983)	(0.639)	(0.732)	(0.624)	(0.873)
$Hot\ Debt\ Mkt_{t-1}$	-0.0191***	-0.00385	-0.0127	-0.0175	0.00667
	(0.001)	(0.689)	(0.460)	(0.395)	(0.559)
$Hot\ Eq\ Mkt_{t-1}$	-0.00299	-0.0019	0.00744	0.0229	-0.00540
	(0.525)	(0.789)	(0.558)	(0.132)	(0.535)
Q_{t-1}	-0.00159	0.00578	0.00840*	0.0364*	0.0210***
	(0.753)	(0.185)	(0.118)	(0.112)	(0.002)
$Tax\ Rate_{t-1}$	-0.00662	0.00356	-0.000815	-0.00112	0.00655
	(0.171)	(0.236)	(0.919)	(0.525)	(0.853)
RDD_{t-1}	0.00197	-0.0209	-0.0307	-0.0642	0.0146
	(0.924)	(0.356)	(0.765)	(0.202)	(0.641)
$RandD\ Expense_{t-1}$	$-4.26x10^{-14}$	$-2.05x10^{06}$	0.000	-0.000698	$-4.16x10^{-7}$
	(0.696)	(0.328)	(0.998)	(0.217)	(0.891)
ERP_{t-1}	0.204	0.00557	0.311	0.360	-0.874***
	(0.285)	(0.983)	(0.513)	(0.533)	(0.026)
$Leverage_{t-1}$	0.770***	0.622***	0.432***	0.676***	0.394***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
η	0.627***	0.106***	0.0583	0.0369	0.627***
	(0.012)	(0.000)	(0.578)	(0.550)	(0.03)
R-Square	0.623	0.4406	0.2789	0 .5128	0.413

Table 6 – Direction of variables across different Shariah-Compliant Groups.

	Market Leverage				
Variables	100%	75%	50%	25%	0%
$Sales_{t-1}$	-0.0451***	-0.0388**	-0.0141	0.00579	-0.0219
	(0.002)	(0.054)	(0.342)	(0.906)	(0.162)
$EFWAMB_{t-1}$	$3.61x10^{-10}$	$2.23x10^{-06}$	0.000543	-0.0297**	$5.24x10^{-05}$
	(0.357)	(0.284)	(0.680)	(0.070)	(0.849)
$CAPEX_{t-1}$	0.0247	-0.0853	-0.0905	0.485**	0.267**
	(0.779)	(0.504)	(0.578)	(0.090)	(0.049)
$Tang_{t-1}$	0.0893***	0.182***	0.110***	0.192***	0.0964
	(0.005)	(0.000)	(0.012)	(0.006)	(0.823)
GDP_{t-1}	0.243***	0.561	-0.204*	0.343***	0.105***
	(0.000)	(0.337)	(0.092)	(0.000)	(0.006)
$OIBD_{t-1}$	-0.125***	-0.0397	0.0299	-0.133	-0.170***
	(0.017)	(0.214)	(0.379)	(0.430)	(0.010)
DEF_{t-1}	-0.0369***	-0.0785***	-0.0455**	0.0309	-0.0361
	(0.042)	(0.000)	(0.083)	(0.297)	(0.304)
$Hot\ Debt\ Mkt_{t-1}$	-0.00604	0.00637	-0.0332	-0.0503**	0.0108
	(0.470)	(0.699)	(0.182)	(0.080)	(0.449)
$Hot\ Eq\ Mkt_{t-1}$	0.005	-0.0194*	-0.0239	0.0377**	0.0139
	(0.452)	(0.108)	(0.195)	(0.074)	(0.195)
Q_{t-1}	0.0317***	0.00132	-0.00639	0.142***	0.0261
	(0.000)	(0.873)	(0.447)	(0.000)	(0.753)
$Tax\ Rate_{t-1}$	0.00613	-0.00233	-0.00453	-0.00141	0.00378
	(0.367)	(0.650)	(0.697)	(0.573)	(0.382)
RDD_{t-1}	-0.0292	-0.0413	0.000	-0.0480	-0.00710
	(0.327)	(0.285)	(0.997)	(0.498)	(0.853)
$RandD\ Expense_{t-1}$	3.71x	$-1.71x10^{-06}$	0.000	-0.000878	$2.48x\ 10^{-06}$
	10^{-13}***	(0.634)	(0.996)	(0.265)	(0.509)
	(0.006)				
ERP_{t-1}	0.301	0.266	0.819	1.97***	-0.318
	(0.269)	(0.562)	(0.237)	(0.016)	(0.509)
$Leverage_{t-1}$	0.699***	0.599***	0.520***	0.857***	0.490***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
η	0.134***	0.210***	0.236***	-0.0681	0.232***
	(0.000)	(0.000)	(0.000)	(0.528)	(0.000)
R-Square	0.470	0.4853	0.4293	0.5722	0.470

Table 7 – Direction of variables across different Shariah-Compliant Groups.

	Change in Book Leverage				
Variables	100%	75%	50%	25%	0%
$Sales_{t-1}$	-1.46***	-0.0148	0.00844	-0.00978	0.0138
	(0.001)	(0.261)	(0.472)	(0.798)	(0.361)
$EFWAMB_{t-1}$	$4.84x10^{-9}$	$-6.55x10^{-07}$	0.000265	-0.00144	-0.000128
	(0.705)	(0.627)	(0.801)	(0.910)	(0.631)
$CAPEX_{t-1}$	-8.805***	0.0569	0.234**	0.0753	0.0880
	(0.002)	(0.488)	(0.071)	(0.734)	(0.495)
$Tang_{t-1}$	1.182	-0.0101	-0.00264	0.109***	0.0501
	(0.204)	(0.761)	(0.939)	(0.041)	(0.232)
GDP_{t-1}	-2.143***	-0.0685**	0.0307	-0.0667	0.0226
	(0.003)	(0.068)	(0.751)	(0.301)	(0.530)
$OIBD_{t-1}$	3.867***	0.00954	0.0301	0.128	-0.117***
	(0.000)	(0.645)	(0.218)	(0.331)	(0.080)
DEF_{t-1}	-3.44***	0.00656	-0.00209	0.00486	0.0136
	(0.001)	(0.649)	(0.922)	(0.833)	(0.693)
$Hot\ Debt\ Mkt_{t-1}$	-0.232	-0.0130	-0.0138	-0.00673	0.0179
	(0.400)	(0.219)	(0.490)	(0.763)	(0.188)
$Hot\ Eq\ Mkt_{t-1}$	0.126	-0.0000945	0.00445	0.0301***	-0.00525
	(0.550)	(0.990)	(0.763)	(0.067)	(0.612)
Q_{t-1}	-1.183***	0.00343	-0.00743	0.0156	0.00811
	(0.000)	(0.477)	(0.221)	(0.535)	(0.308)
$Tax\ Rate_{t-1}$	0.0303	0.00432	-0.00412	-0.00117	0.00488
	(0.896)	(0.193)	(0.658)	(0.541)	(0.242)
RDD_{t-1}	-1.528***	-0.00255	0.00168	-0.00934	-0.0418
	(0.039)	(0.918)	(0.989)	(0.862)	(0.259)
$RandD\ Expense_{t-1}$	$2.98x10^{-12}$	$-2.58x10^{-06}$	0.000	-0.00066	$-8.1x10^{-07}$
	(0.526)	(0.267)	(0.995)	(0.282)	(0.823)
ERP_{t-1}	8.236	0.252	0.282	0.473	-0.620
	(0.356)	(0.395)	(0.609)	(0.453)	(0.183)
$Leverage_{t-1}$	4.167***	-0.102**	-0.215***	0.0354	-0.326***
	(0.000)	(0.024)	(0.000)	(0.661)	(0.000)
η	-0.268	0.0221	-0.0122	0.320	0.0560
	(0.772)	(0.474)	(0.920)	(0.320)	(0.162)
R-Square	0.329	0.0305	0.0305	0.0305	0.155

Table 8 – Direction of variables across different Shariah-Compliant Groups.

Change in Market Leverage					
Variables	100%	75%	50%	25%	0%
$Sales_{t-1}$	-0.0379***	-0.0528***	0.0122	0.0131	-0.0401***
	(0.015)	(0.019)	(0.464)	(0.791)	(0.029)
$EFWAMB_{t-1}$	$4.07x10^{-10}$	$2.58x10^{-06}$	0.000114	-0.0340***	-0.000563**
	(0.327)	(0.269)	(0.939)	(0.039)	(0.079)
$CAPEX_{t-1}$	-0.0260	0.176	0.00966	0.526**	-0.0385
	(0.786)	(0.208)	(0.958)	(0.071)	(0.809)
$Tang_{t-1}$	0.0262	0.114***	0.0638	0.196***	0.00326
	(0.425)	(0.047)	(0.195)	(0.006)	(0.949)
GDP_{t-1}	0.312***	0.149***	-0.312***	0.312***	0.147***
	(0.000)	(0.021)	(0.025)	(0.000)	(0.001)
$OIBD_{t-1}$	-0.0338	-0.0285	-0.130***	-0.167	0.327***
	(0.572)	(0.421)	(0.000)	(0.341)	(0.000)
DEF_{t-1}	-0.0314	-0.103***	-0.0654***	0.0317	-0.0489
	(0.375)	(0.000)	(0.031)	(0.290)	(0.239)
$Hot\ Debt\ Mkt_{t-1}$	-0.00876	-0.0122	-0.0136	-0.0512***	0.0344**
	(0.321)	(0.504)	(0.632)	(0.079)	(0.039)
$Hot\ Eq\ Mkt_{t-1}$	0.00347	-0.0166	-0.0402**	0.0355**	0.0166
	(0.618)	(0.217)	(0.057)	(0.097)	(0.205)
Q_{t-1}	0.0768***	0.0420***	-0.0330**	0.163****	0.0186**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.051)
$Tax\ Rate_{t-1}$	0.00694	0.00205	-0.0120	-0.000489	-0.00548
	(0.354)	(0.719)	(0.365)	(0.844)	(0.282)
RDD_{t-1}	-0.00926	-0.0107	0.000	-0.0236	-0.00340
	(0.764)	(0.803)	(0.994)	(0.734)	(0.940)
$RandD\ Expense_{t-1}$	$4.49x10^{-13}$***	$-2.12x10^{-06}$	0.000	-0.00100	$-1.79x10^{-06}$
	(0.003)	(0.595)	(0.993)	(0.207)	(0.686)
ERP_{t-1}	0.407	0.277	1.63***	2.300***	-0.204
	(0.158)	(0.586)	(0.038)	(0.005)	(0.719)
$Leverage_{t-1}$	0.198***	-0.0637**	-0.148***	-0.1056	0.101**
	(0.000)	(0.053)	(0.002)	(0.140)	(0.074)
η	-0.0602***	-0.302	-0.0291	-0.182**	-0.0413***
	(0.109)	(0.570)	(0.315)	(0.036)	(0.397)
R-Square	0.135	0.1440	0.1440	0.2983	0.189

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Appendix

$$Y_t = Y_{t-1} + EFWAMB_{t-1} + ERP_{t-1} + HotMarket_t + X_{t-1} + u_t \quad (1)$$

Where,

Y_t Are the different measurements of leverage which include

Change in Book Leverage: $\Delta L_t = (Change\ in\ debt\ and\ preferred\ stock\ from\ year\ t-1\ to\ t)/(Beginning\ of\ year\ Total\ assets)$

Level Book Leverage: $L_t = (Total\ Debt)/(Total\ Assets)$

Change in Market Leverage: $\Delta ML_t = ML_t - ML_{t-1})$

Level Market Leverage:
$ML = (Total\ Liabilities)/(Total\ Liabilities + Market\ Equity)$

$EFWAMB_{t-1} = External\ Finance\ weighted\ average\ Market\ to\ book\ ratio =$

$$\sum_{s=1}^{t-1} \frac{e_s + d_s}{\sum_{r=1}^{t-1} e_r + d_r} \times \mathrm{MB}_s,$$

e and d are equity and debt issuance respectively, MB is market-to-book ratio.

$ERP = implied\ equity\ risk\ premium$ (see **Damodaran, 2013**)

HOT = months when IPO volume is above the median in the distribution of the detrended monthly moving average IPO volume of the entire sample. It is a dummy variable.

$$X = CAPEX_{t-1} + OIBD_{t-1} + Sale_{t-1} + Q_{t-1} + Tang_{t-1} + Tax_t + RGDP\ growth_t + RandD_{t-1} + RDD_{t-1} + +$$

where

$$CAPEX_{t-1} = \frac{Total\ capital\ expenditure}{Total\ Assets}$$

$$OIBD_{t-1} = \frac{Operating\ income\ before\ depreciation}{Total\ Assets}$$

$$Sale_{t-1} = Log\ of\ net\ sales$$

$$Q_{t-1} = \frac{(Market\ value\ of\ equity + Book\ value\ of\ debt)}{Book\ value\ of\ assets}$$

$$Tang_{t-1} = \frac{Net\ property, plant\ and\ equipment}{Total\ Assets}$$

$$Tax_t = Effective\ Corporate\ Tax\ rate$$

$RGDP\ \ growt\ \ h_t = Real\ \ GDP\ \ growt\ \ h\ rate$

$RandD\ \ _{t-1} = Researc\ \ h\ and\ \ development\ \ expense$

$RDD\ _{t-1} = A\ dummy\ \ vari\ \ able\ \ t\ hat\ \ equals\ \ 1\ if\ \ RandD\ \ is\ \ zero$