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Research paper

Capital structure, capital investment and profitability among Malaysian listed firms

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Abstract

Capital investments are referred as a critical managerial decision on firm's fixed asset for generating profitability. However, the empirical finding shows that not every capital investment has a significant positive effect on profitability. Literature indicates mixed results of examining the capital investment relationship with firm's profitability, which vary in respects to the debt structure. On the other hand, strong government reinforcement has pushed Malaysia up as one of the top ten countries with robust private capital investment in the year 2004. Since the capital investments are typically irreversible and hypothesized as profit generator, the first aim of this study is to examine the effect of the capital investment on the firm's profitability across firms and sectors. The second aim is to examine the moderating effect of capital structure on the relationship between capital investment and profitability across firms and sectors. This study utilized pooled ordinary least squares and fixed effect analysis across 708 non-financial Malaysian listed firms. The unbalanced datasets for the period 2001 to 2015 were employed to check the robustness of these results. This study suggested that capital investment has a strong significant positive effect on profitability measurements across Malaysian listed firms in non-financial sectors. On the other hand, the significant negative moderating effect of capital structure on the relationship between capital investment and return on capital across Malaysian listed firms reflected the perspective of empire building theory. In addition, the independent sample test engaged across sectors affirmed that moderating effect of capital structure are different across sectors. Thus, this study concluded the existence of moderating effect of capital structure on the relationship between capital investment and profitability. This study addressed the knowledge gap on the moderating effect of capital structure based on empire building theory.

Keywords: *Capital Structure, Capital Investment and Profitability*

1. Introduction

Profit is a purely summed surplus derived from the business enterprise that can be distributed to the shareholders [1]. Similarly, in managerial finance, the major concern is the cost of financing and the return from the investment to achieve maximum profitability for the corporation [2]. Thus, firm's profitability is interrelated with cost and return from firm's investment activity. However, variation exists between the value created for shareholder's wealth and firm's profitability maximisation [3]. Based on the agency theory, the primary objective of a firm is to maximize shareholder's wealth, which leads to little previous studies on the effects of capital investment concentration in opposition toward capital investment evaluation [4, 5]. The proper investment criteria are rationalized for generating medium and long-term benefit from capital investment for the firm and eventually for national economic growth [6, 7]. In the numerous ensuing studies, discussion is more focused on the effects of capital investment on firm's profitability [8, 9] and working capital management [10, 11, 12]. Later, the literature developed by exploring the effects of capital investment on firm value [13, 14, 15] as the corporate financial manager's objective is to ensure the minimum cost of capital that maximises the wealth of shareholders [16].

Studies conducted across firms identified a positive relationship between capital investment and profitability in the developed countries [17, 18, 19, 20]. Meanwhile, several firm level studies have documented a negative relationship between capital investment and profitability in the developed countries [21, 22]. However, the study on capital investment with profitability in developing countries is inadequate. However, the general expectation of capital investment is to maximize the firm's overall profitability based on neoclassical theory. Chung [23] demonstrated a positive relationship between capital investment announcements and firm's return. Furthermore, markets perceived cumulative increase in capital investment as a valuable signal for investment opportunities. Given the huge amount of capital investment by corporate companies in emerging countries [24], it is surprising that there are just few studies addressing the effects of capital investment on profitability for past years. Emerging market performance has lagged the developed markets performance significantly due to capacity to adapt to new markets [25]. Moreover, the state of capital markets in many emerging economies looks particularly poor despite the huge effort undertaken to improve the macroeconomic environment and reform the institutions that are believed to foster financial development.

2. Research background

During the 19th century, most corporations are owned and controlled by the proprietors. The ownership and power to control these corporations are operating as one entity. At the beginning of 20th century, the ownership and management control have been gradually detached as two units that work distinctly. The separa-

tion of management and ownership creates the potential for management to engage in empire-building behaviour [26]. Managers are assumed to have an "empire building" tendency where they enjoy private benefits from controlling more capitals and managing higher quality projects. Managers are the empire builders that continue to choose capital investment even after all positive net present value (NPV) projects have been taken. Titman [27] argued that empire-building managers may have an incentive to put the best spin on their investment opportunities as well as on their overall business when they make high capital investments.

Firms with investment discretion with debt-financing benefit are known having high cash flow with low leverage cost [28]. Excessive free cash flow enables managers to invest in negative NPV projects after exhausting positive NPV projects. This greater investment discretion is more likely to promote over investment in capital investment based on agency cost in the context of empire building theory. The agency cost hypothesis predicts that managers, when not monitored by shareholders, will make self-maximizing decisions, which may not necessarily be in the best interest of shareholders. Initial study on empire building emphasized by Donaldson [29] has suggested that manager's decisions include aggressively growing the firm by capital investment.

Firms reinvest their accumulated substantial wealth and free cash flow to commence capital investment. However, the firm's internal resources are not sufficient to finance the continuous growth opportunity [30]. On the other hand, when firms have a cash short fall, the possibility of overinvestment is mitigated because they are forced to raise funds through external markets that provide a monitoring role. Thus, the external debt financing becomes the best alternative method of financing without the owner involved in his or her own funding contribution. Consequently, the demand for bank debt instruments increased since these instruments do not reduce the owner's shareholding[31]. However, the debt financing is limited to an extent to maintain the competitive advantage and benefit gained from the economies of scale due to a high cost of financing [31]. Lumbering capital investment is related to lumpy capital structure adjustment due to different financing policies [24]. Meanwhile, the changes in capital investment are caused by the investment and financing policy based on the empire building theory that demands additional investigation in the context of adjustment in leverage that may lead to changes in profitability level.

Capital structure decision is one of the firm's characteristics besides environment and tradition in which the firm operates. On the other hand, empire building theory is one of the essential theories identified under agency cost theory in capital structure [32]. The mixture of liability and equity to finance investment in maximizing return is referred to as capital structure. According to Parrino and Kidwell [33], an optimal capital structure is achieved when a firm minimizes the cost of financing and maximizes its total value. Raising short-term or long-term funds from internal or external source are the financial decisions concerned in capital structure, which is one of the important issues in corporate finance.

Empirical studies documented that highly cash liquid firm is more likely to engage in value decreasing projects particularly when managers are poorly governed [34, 35, 36]. Based on this underlying assumption, the managers prefer to expand their corporations faster than they should [37]. Firms with excessive investment may face deteriorating profitability due to over investment. Results demonstrated that the associations are indeed aggravated when firms have high free cash flows and low leverage, which is consistent with management empire-building motivations.

Debt could potentially mitigate the over-investment problem. It restricts the use of internal funds generated by a firm by forcing the managers to use cash flow to meet contractual financial obligations. Managers' incentives for empire-building may be constrained by creditors' legal rights to reorganize or even liquidate the firm in case of default. Thus, the negative association between investment and profitability could reasonably be expected to be weaker in firms with high debt as the manager's tendency is to use the firm's internal fund to build the empire. However, debt cannot perfectly allow managers to invest optimally [38]. High level of debt also brings potential costs including bankruptcy cost. Consistent with [39], the negative association is stronger when firms have greater investment discretion for those firms with higher free cash flow and lower leverage.

This reinforces of Jensen [39] notion that empire-building incentives can drive the negative association between capital investment and profitability. Their results are consistent with recent findings in the study by [40] that empire-building incentives appeared to be the dominant issue in the capital structure. Profitability is inherently linked to a company's capital spending decisions in emerging countries, which is the management's effectiveness at investing in projects that add value. Trends in corporate capital spending revealed that emerging market firms had invested more than the developed markets. Ultimately, fundamental investors suggest that improved profitability can emerge from differentiation at the company level capital structure. Thus, the aim of this study is to bring novelty by involving capital structure as moderating variable on the relationship between capital investment and profitability.

The past literatures have similarly stressed on the effects of capital investment on firm's profitability across the firms in developed [9, 20] and developing country [41]. The extensive reinforcement by the Malaysia government such as ETP and NEM policy privatization programme had gave a significant contribution to the increases of capital investment and Malaysian economic growth since its commencement on 1983. However, the encouragement to involve in capital investment may place the firms to insolvency.

The vigorous nature or content has been seen varied across sectors for capital investment in developing countries [42]. Accordingly, the raising capital investment trend in Malaysia since the year 2010 to boost economy growth upon 2009 recession [43] varies across sectors in Malaysia. Besides, the tax incentive and allowances to promote capital investment differ according to encouraged sectors. Thus, it may create varying results between capital investment and profitability across sectors in Malaysia.

The empirical study evidenced by Esfahani [44] indicated efficient capital structure as an important element for the firms to be sustainable in the market. Public expenditure policies shape the growth prospect for developing countries. The Malaysian government drives economic transformation whereby the 10th Malaysia Plan pursues a smart partnership between the public and private sectors [43]. The 10th Malaysia Plan is an important economic development blueprint involving structural reform in Malaysian economy to achieve a developed nation status. One of the pillars is to achieve the goal of 10th Malaysia plan via supporting an effective and smart partnership. A facilitation fund of RM20 billion has been established to promote investments in nationally strategic areas. The new privatization plans promote capital investment in private sectors with high growth and potential competitiveness. These plans also support the private sectors in driving industry development particularly in human capital development and R&D by providing special financing schemes grounded on capital market master plan.

3. Research objectives

Following are the four objectives of this study: 1) To examine the effects of capital investment on profitability across the listed firms in Malaysia. 2) To examine the effects of capital investment on profitability across sectors of listed firms in Malaysia. 3) To investigate the moderating effects of capital structure on the relationship between capital investment and profitability across the listed firms in Malaysia. 4) To investigate the moderating effects of capital structure on the relationship between capital investment and profitability across sectors of listed firms in Malaysia.

4. Methodology

The panel data were prepared for overall firms listed from the year

2001 to year 2015. The research objectives results obtained from pooled OLS and fixed effect estimation and moderated pooled OLS fixed effect estimation. The findings of fixed effect estimations are presented from table 4.1 to table 4.9 The longitudinal data of 15 years may allow capital investment's long-term as long-term decision analysis (Sullivan and Zhang, 2011). Second, panel data set were organized according to the sectors of the firms listed in Bursa Malaysia. The across sector analysis may indicate the diverse findings on the strength of the effect or direction of relationship according to the industry nature. The table below shows the list of sectors in Bursa Malaysia as at 16 December 2016.

No	List of Sector	Population	Sample
1	Industrial Products	192	167
2	Trading & Services	181	155
3	Consumer Products	127	116
4	Technology	118	99
5	Properties	88	78
6	Construction	48	37
7	Plantation	42	30
8	Real Estate Investment Trust	28	26
Total Firm		**824**	**708**

Below are the variables that representing the concept of study in examining the outcome of study.

Variables	Formulation
Capital expenditure (CE)	Beginning fixed asset minus ending fixed asset divided by beginning total asset
Current Capital Expenditure (CCE)	Capital expenditure divided by the market value of equity at the beginning of the year
Long Term Debt to Total Asset (LTDTD)	Long-term debt divided by the total assets
Short Term Debt to Total Asset (STDTD)	Short-term debt divided by the total assets
Return on Asset (ROA)	Net income plus interest expense divided by the total assets
Return on Capital Employed (ROCE)	Earning after Interest and Taxes divided by Capital Employed
Return on Capital (ROC)	Earning before tax minus dividend divided by Total capital
Firm Size (SIZE)	Log of Total Asset
Financial Crisis	Pre-CRISIS (2001-2007)

5. Result

Research Questions 1: Does capital investment affects profitability across listed firms in Malaysia?

Table 4.1 demonstrates the result of fixed effect analysis in determining the effect of capital investment on profitability of analysis across firms and across sectors. Hypotheses 1 to 6 determined based on result across and hypotheses 7 to 24 results across sectors based on findings in Table 4.1. The tables illustrate effect of capital investment CE (positive) and CCE (positive) on profitability; ROA, ROCE and ROC. The overall sample shows strong significant effect of CE and SIZE on ROA and weak positive significant effect of CE on ROC. Thus, these findings do not reject the Hypothesis 1: Capital expenditure (CE) has significant effect on return on asset (ROA) across listed firms in Malaysia and Hypothesis 2: Capital expenditure (CE) has significant effect on return on capital (ROC) across listed firms in Malaysia. The overall sample indicates high influence of two independent variables on ROA based on F stat of 25.35. Thus, the hypothesis 3 to 6 is rejected due to insignificant results obtained. It is observed that no significance noted except SIZE has strong positive significant effect on ROA in industrial products sector. In trading and services sector, the control variable SIZE has significant on ROA, ROCE and ROC. Followed by that, the CE (positive) and CRISIS (positive) has significant effect on ROA in trading and services sector.

Research Questions 2: Does capital investment affects profitability across sectors of listed firms in Malaysia?

The table 4.1 of fixed effect analysis shows weak significant effect of CRISIS on ROA in trading & services and REITs sectors. The table also indicates that CE (positive) has strong significant effect on ROA with strong significant effect of SIZE on ROCE and ROC in consumer products sector. Subsequently, the CCE and SIZE has weak negative significant effect on ROC in construction sector. Positive significant effect of CE on ROA identified pertaining to findings in plantation sector. The identical regression model indicates weak positive significant effect of SIZE on ROCE in plantation sector. The table shows significant results of three proxies of capital investment; CE (positive) and CCE (negative) on ROCE and ROC with weak positive significant effect of SIZE on ROCE in REITs sector. Thus, the findings do not reject the hypothesis 7 to 12.

Table 4.1: Effect of Capital Investment on Profitability based on Fixed Effect Analysis

SAMPLE	N	IV	ROA	ROCE	ROC
OVERALL	**10620**	CE	0.473 (0.000)***	0.000 (0.471)	0.021 (0.051)*
		CCE	-0.00 (0.487)	-0.008 (0.324)	0.094 (0.263)
		CRISIS	0.009 (0.412)	0.114 (0.287)	0.124 (0.227)
		SIZE	0.134 (0.000)***	-0.096 (0.418)	-0.074 (0.493)
		F Stat	25.35	0.66	0.72
INDUSTRIAL PRODUCTS	**2505**	CE	0.000 (0.439)	0.000 (0.306)	0.000 (0.310)
		CCE	-0.006 (0.112)	-0.023 (0.227)	-0.090 (0.251)
		CRISIS	0.020 (0.271)	-0.062 (0.340)	-0.084 (0.316)
		SIZE	0.323 (0.000)***	-0.006 (0.795)	0.111 (0.312)
		F Stat	12.69	2.40	0.74
TRADING & SERVICES	**2325**	CE	0.330 (0.000)***	0.000 (0.131)	0.000 (0.105)
		CCE	0.000 (0.982)	-0.001 (0.554)	-0.002 (0.532)
		CRISIS	0.059 (0.088)*	-0.003 (0.791)	0.001 (0.945)
		SIZE	0.221 (0.000)***	0.019 (0.000)***	0.009 (0.039)**
		F Stat	22.98	4.80	1.49
CONSUMER PRODUCTS	**1740**	CE	0.601 (0.000)***	-0.001 (0.253)	-0.002 (0.158)
		CCE	0.000 (0.538)	0.015 (0.000)***	0.321 (0.000)***
		CRISIS	-0.010 (0.488)	0.144 (0.303)	0.159 (0.260)
		SIZE	0.004 (0.837)	0.166 (0.140)	0.403 (0.134)
		F Stat	16.63	11.93	5.25
TECHNOLOGY	**1485**	CE	0.000 (0.299)	0.002 (0.297)	0.001 (0.339)
		CCE	0.001 (0.801)	-0.166 (0.316)	-0.124 (0.433)
		CRISIS	0.007 (0.748)	0.350 (0.374)	0.301 (0.393)
		SIZE	-0.009 (0.405)	-0.828 (0.307)	-0.745 (0.306)
		F Stat	0.67	0.27	0.27
PROPERTIES	**1091**	CE	0.000 (0.359)	-0.124 (0.399)	-0.150 (0.443)
		CCE	0.003 (0.741)	0.002 (0.688)	0.022 (0.547)

SAMPLE	N	IV	ROA	ROCE	ROC
		CRISIS	0.009 (0.718)	-0.013 (0.703)	-0.005 (0.910)
		SIZE	-0.034 (0.407)	0.059 (0.450)	0.034 (0.741)
		F Stat	3.41	1.83	1.31
		CE	0.000 (0.292)	0.000 (0.363)	0.000 (0.872)
		CCE	0.010 (0.170)	-0.054 (0.148)	-0.080 (0.079)*
CONSTRUCTION	**555**	CRISIS	0.018 (0.519)	0.009 (0.620)	0.019 (0.450)
		SIZE	-0.035 (0.374)	-0.018 (0.109)	-0.023 (0.081)*
		F Stat	2.24	1.10	0.96
		CE	0.140 (0.002)***	0.000 (0.480)	0.000 (0.800)
		CCE	-0.024 (0.227)	0.011 (0.462)	0.024 (0.395)
PLANTATION	**450**	CRISIS	-0.056 (0.419)	-0.012 (0.339)	-0.002 (0.883)
		SIZE	-0.006 (0.742)	0.014 (0.068)*	0.005 (0.475)
		F Stat	5.32	3.06	3.03
		CE	0.000 (0.403)	0.147 (0.015)**	0.083 (0.006)***
		CCE	-0.006 (0.880)	-0.308 0.004)***	-0.354 (0.007)***
REITs	**390**	CRISIS	-0.065 (0.061)*	0.043 (0.390)	0.043 (0.429)
		SIZE	0.048 (0.437)	0.076 (0.057)*	0.064 (0.126)
		F Stat	1.59	4.75	5.68

The dependent variables are return on asset (ROA), return on capital employed (ROCE) and return on capital (ROC). The independent variables are capital expenditure (CE) and current capital expenditure (CCE). The moderating variables are short term debt to total debt (STDTD) and long-term debt to total debt (LTDTD). The independent by moderating variables are capital expenditure by short-term debt (CESTDTD), current capital expenditure by short-term debt (CCESTDTD), capital expenditure by long-term debt (CELTDTD), current capital expenditure by long-term debt (CCELTDTD). The control variables are size of firm (SIZE) and financial crisis (CRISIS). N is the number of observations of each sample.The Coef (p-value) is recorded in table to show the strength of coefficient with significance of p-value. The p-values shown in parentheses are computed using standard errors robust to heteroskedasticity. ***, ** and * denote significance of the coefficient estimates at the 1, 5 and 10% levels, respectively.

Research Question 3: Does capital structure have moderating effects on the relationship between capital investment and profitability across listed firms in Malaysia?

Moderating Effect of Capital Structure Across Firms (STDTD)

Table 4.2 referring to findings on examining the moderating effect of STDTD on the relationship between capital investment and profitability based on overall firm listed in Malaysia. The positive effect of capital expenditure on return on asset is similar to moderating effect regression whereby, short-term debt has partial effect on the positive relationship between capital expenditure and return on asset. Thus, the findings fail to reject Hypothesis 13: Short-term debt to total asset (STDTD) has the moderating effect on the relationship between capital expenditure (CE) and return on asset (ROA) across listed firms in Malaysia.

According to the fixed effect model, the STDTD has weak positive (Coef = 0.036) moderating effect on the relationship between CCE and ROCE and strong positive significant (Coef. = 0.363) moderating effect on the relations between CCE and ROC in overall firms listed in Malaysia. The CCE has partial weak negative effect on ROCE and strong negative effect on ROC but with weak F stat (0.72, 2.16) of lower than 3.0. According to Table 4.2, the fixed effect analysis indicates strong positive significant (Coef = 0.363) moderating effect of STDTD on the relationship between CCE and ROC[56]. Thus, the findings do not reject Hypothesis 17: Short -term debt to total asset (STDTD) has moderating effect on the relationship between current capital expenditure (CCE) and return on capital (ROC) across listed firms in Malaysia and Hypothesis 18: Short -term debt to total asset (STDTD) has moderating effect on the relationship between current capital expenditure (CCE) and return on capital employed (ROCE) across listed firms in Malaysia. Based on findings in Table 4.2, the hypothesis14, 15 and 10 is rejected due to insignificant results.

Moderating Effect of Capital Structure across Firms (LTDTD)

The result of Table 4.2 demonstrates the moderating effect of LTDTD on the relationship between capital investment and profitability. The significant moderating effect of LTDTD on the relationship between CE and ROA identified which is not rejecting the Hypothesis 19: Long-term debt to total asset (LTDTD) has moderating effect on the relationship between capital expenditure (CE) and return on asset (ROA) across listed firms in Malaysia. However, the findings support to reject the hypotheses 15 to 19 based insignificant moderating effect on LTDTD

Table 4.2: Moderating Effect of Capital Structure Across Firms

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
	Ce	0.258 (0.000)***	0.000 (0.410)	0.000 (0.351)
	Cce	0.000 (0.928)	-0.030 (0.064)*	-0.125 (0.003)***
	Stdtd	0.029 (0.372)	0.282 (0.401)	0.060 (0.846)
Short-Term Debt To Total Debt (Stdtd)	Cestdtd	0.000 (0.141)	0.000 (0.351)	0.000 (0.112)
	Ccestdtd	-0.001 (0.892	0.036 (0.065)*	0.363 (0.001)***
	Crisis	0.010 (0.345)	0.116 (0.285)	0.131 (0.209)
	Size	0.130 (0.000)***	-0.119 (0.412)	-0.080 (0.544)
	F Stat	8.79	0.72	2.16
	Ce	0.789 (0.000)***	0.000 (0.363)	0.000 (0.228)
	Cce	-0.003 (0.215)	-0.009 (0.580)	0.202 (0.054)
	Ltdtd	-0.038 (0.445)	-0.805 (0.267)	-0.844 (0.203)
Long-Term Debt	Celtdtd	0.000 (0.247)	0.000 (0.368)	0.000 (0.290)
	Cceltdtd	0.007 (0.205)	0.003 (0.876)	-0.281 (0.051)
	Crisis	0.009 (0.418)	0.118 (0.287)	0.129 (0.223)
	Size	0.135 (0.000)***	-0.042 (0.553)	-0.014 (0.837)
	F Stat	1.71	1.02	1.75

Table 4.3: Moderating Effect of Capital Structure Across Industrial Products Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.000 (0.411)	0.000 (0.124)	0.000 (0.415)
	Cce	-0.017 (0.189)	-0.083 (0.065)*	-0.356 (0.055)*
	Stdtd	0.019 (0.889)	0.236 (0.264)	0.229 (0.433)
	Cestdtd	0.000 (0.742)	0.000 (0.175)	0.000 (0.871)
	Ccestdtd	0.027 (0.293)	-0.150 (0.076)*	-0.660 (0.061)*
	Crisis	0.022 (0.215)	-0.061 (0.334)	-0.090 (0.255)
	Size	0.327 (0.000)***	-0.016 (0.408)	0.068 (0.343)
	F Stat	7.62	1.84	0.97
Long-Term Debt	Ce	0.000 (0.321)	0.000 (0.759)	0.000 (0.096)*
	Cce	-0.019 (0.240)	0.000 (0.991)	-0.169 (0.496)
	Ltdtd	0.182 (0.003)***	-0.043 (0.643)	-0.266 (0.375)
	Celtdtd	0.000 (0.679)	0.000 (0.430)	0.000 (0.167)
	Cceltdtd	0.023 (0.359)	-0.040 (0.633)	0.145 (0.721)
	Crisis	0.024 (0.158)	-0.063 (0.335)	-0.083 (0.332)
	Size	0.307 (0.000)***	0.000 (0.984)	0.107 (0.224)
	F Stat	10.11	2.20	0.62

Table 4.4: Moderating Effect of Capital Structure Across Trading & Service Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.389 (0.000)***	0.000 (0.328)	0.000 (0.798)
	Cce	-0.003 (0.512)	0.004 (0.499)	0.006 (0.550)
	Stdtd	-0.075 (0.413)	0.025 (0.477)	0.007 (0.881)
	Cestdtd	0.020 (0.037)**	0.000 (0.603)	0.000 (0.348)
	Ccestdtd	0.010 (0.275)	-0.015 (0.490)	-0.026 (0.499)
	Crisis	0.063 (0.069)*	-0.004 (0.707)	-0.003 (0.801)
	Size	0.225 (0.000)***	0.017 (0.003)***	0.010 (0.144)
	F Stat	8.83	2.97	0.96
Long-Term Debt	Ce	0.000 (0.000)***	0.000 (0.263)	0.000 (0.184)
	Cce	0.003 (0.763)	-0.010 (0.545)	-0.020 (0.510)
	Ltdtd	-0.138 (0.346)	0.051 (0.131)	0.051 (0.174)
	Celtdtd	0.185 (0.078)*	0.000 (0.480)	0.000 (0.231)
	Cceltdtd	-0.004 (0.737)	0.013 (0.542)	0.026 (0.517)
	Crisis	0.060 (0.083)*	-0.003 (0.760)	-0.001 (0.916)
	Size	0.227 (0.000)***	0.016 (0.004)***	0.007 (0.295)
	F Stat	7.26	5.06	2.39

Table 4.5: Moderating Effect of Capital Structure Across Consumer Products Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.011 (0.000)***	-0.002 (0.265)	-0.002 (0.355)
	Cce	-0.003 (0.462)	-0.045 (0.116)	-0.005 (0.942)
	Stdtd	-0.017 (0.784)	-0.786 (0.302)	-0.429 (0.609)
	Cestdtd	0.000 (0.220)	0.002 (0.270)	-0.001 (0.845)
	Ccestdtd	0.002 (0.519)	0.630 (0.057)*	0.351 (0.000)***
	Crisis	-0.009 (0.550)	0.157 (0.293)	0.164 (0.269)
	Size	0.006 (0.811)	0.246 (0.193)	0.449 (0.100)
	F Stat	13.11	14.52	6.59
Long-Term Debt	Ce	0.001 (0.000)***	-0.002 (0.308)	-0.003 (0.141)
	Cce	0.000 (0.762)	0.018 (0.000)***	0.354 (0.000)***
	Ltdtd	-0.050 (0.703)	-1.692 (0.302)	-2.856 (0.157)
	Celtdtd	0.000 (0.183)	0.001 (0.468)	0.001 (0.330)
	Cceltdtd	-0.002 (0.603)	-0.035 (0.315)	-0.416 (0.000)***
	Crisis	-0.007 (0.629)	0.152 (0.307)	0.135 (0.367)
	Size	0.005 (0.824)	0.253 (0.208)	0.555 (0.125)
	F Stat	12.74	10.66	4.64

Table 4.6: Moderating Effect of Capital Structure Across Technology Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.000 (0.772)	0.003 (0.198)	0.003 (0.178)
	Cce	0.005 (0.588)	-0.839 (0.192)	-0.814 (0.169)
	Stdtd	-0.020 (0.664)	0.882 (0.423)	0.800 (0.419)
	Cestdtd	0.000 (0.152)	0.001 (0.555)	0.001 (0.671)
	Ccestdtd	-0.009 (0.413)	0.990 (0.193)	1.020 (0.149)
	Crisis	0.008 (0.721)	0.349 (0.363)	0.300 (0.384)
	Size	-0.010 (0.332)	-0.974 (0.300)	-0.880 (0.297)
	F Stat	1.81	0.39	3.09
Long-Term Debt	Ce	0.000 (0.546)	0.002 (0.478)	0.002 (0.506)
	Cce	-0.002 (0.616)	-0.203 (0.447)	-0.137 (0.598)

	Ltdtd	0.001 (0.982)	-3.497 (0.332)	-3.174 (0.326)
	Celtdtd	0.000 (0.709)	-0.001 (0.866)	-0.001 (0.888)
	Cceltdtd	0.006 (0.643)	0.101 (0.848)	0.027 (0.959)
	Crisis	0.007 (0.742)	0.306 (0.377)	0.262 (0.400)
	Size	-0.008 (0.468)	-0.605 (0.296)	-0.545 (0.294)
	F Stat	0.66	0.16	0.16

Table 4.7: Moderating Effect of Capital Structure Across Properties Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.000 (0.349)	0.000 (0.585)	0.000 (0.639)
	Cce	0.009 (0.242)	-0.004 (0.125)	0.008 (0.590)
	Stdtd	0.019 (0.855)	0.078 (0.360)	0.062 (0.591)
	Cestdtd	0.000 (0.765)	0.000 (0.253)	0.000 (0.486)
	Ccestdtd	-0.024 (0.168)	0.027 (0.164)	0.053 (0.622)
	Crisis	0.008 (0.747)	-0.015 (0.675)	-0.008 (0.877)
	Size	-0.035 (0.404)	0.060 (0.447)	0.036 (0.731)
	F Stat	2.84	1.78	1.24
Long-Term Debt	Ce	-0.168 (0.309)	-0.007 (0.957)	-0.119 (0.710)
	Cce	0.000 (0.469)	0.000 (0.264)	0.000 (0.359)
	Ltdtd	-0.017 (0.225)	0.023 (0.274)	0.076 (0.496)
	Celtdtd	0.000 (0.180)	0.000 (0.237)	0.000 (0.373)
	Cceltdtd	0.027 (0.100)	-0.028 (0.203)	-0.074 (0.493)
	Crisis	0.009 (0.684)	-0.016 (0.655)	-0.008 (0.885)
	Size	-0.050 (0.248)	0.060 (0.445)	0.035 (0.731)
	F Stat	5.31	1.72	1.53

Table 4.8: Moderating Effect of Capital Structure Across Construction Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.000 (0.710)	0.000 (0.174)	0.000 (0.866)
	Cce	0.005 (0.138)	-0.054 (0.182)	-0.077 (0.113)
	Stdtd	0.343 (0.036)**	0.076 (0.278)	0.155 (0.098)*
	Cestdtd	-0.331 (0.085)*	0.000 (0.086)*	0.000 (0.177)
	Ccestdtd	0.052 (0.044)**	-0.004 (0.944)	-0.050 (0.443)
	Crisis	0.020 (0.480)	0.011 (0.551)	0.020 (0.433)
	Size	-0.034 (0.392)	-0.019 (0.087)*	-0.025 (0.061)*
	F Stat	20.08	45.79	60.10
Long-Term Debt	Ce	0.000 (0.246)	0.000 (0.021)**	0.000 (0.170)
	Cce	0.022 (0.422)	0.011 (0.556)	-0.023 (0.435)
	Ltdtd	-0.140 (0.318)	-0.027 (0.634)	-0.047 (0.531)
	Celtdtd	0.000 (0.333)	0.000 (0.005)***	0.000 (0.023)**
	Cceltdtd	-0.015 (0.558)	-0.080 (0.139)	-0.070 (0.309)
	Crisis	0.020 (0.473)	0.010 (0.533)	0.020 (0.357)
	Size	-0.018 (0.596)	-0.013 (0.321)	-0.017 (0.263)
	F Stat	2.25	1.82	1.69

Table 4.9: Moderating Effect of Capital Structure Across Plantation Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.000 (0.166)	0.000 (0.686)	0.000 (0.302)
	Cce	-0.010 (0.615)	0.007 (0.379)	0.012 (0.416)
	Stdtd	0.228 (0.293)	-0.076 (0.308)	-0.162 (0.176)
	Cestdtd	0.000 (0.735)	0.000 (0.214)	0.000 (0.095)*
	Ccestdtd	-0.062 (0.251)	0.022 (0.643)	0.063 (0.448)
	Crisis	-0.046 (0.501)	-0.013 (0.291)	-0.005 (0.753)
	Size	-0.019 (0.426)	0.015 (0.119)	0.008 (0.307)
	F Stat	10.68	2.87	3.13
Long-Term Debt	Ce	0.000 (0.031)**	0.000 (0.953)	0.000 (0.955)
	Cce	-0.040 (0.390)	0.020 (0.697)	0.066 (0.497)
	Ltdtd	0.173 (0.546)	-0.001 (0.992)	-0.003 (0.943)
	Celtdtd	0.000 (0.131)	0.000 (0.802)	0.000 (0.987)
	Cceltdtd	0.021 (0.688)	-0.012 (0.810)	-0.054 (0.562)
	Crisis	-0.055 (0.433)	-0.011 (0.455)	0.001 (0.951)
	Size	-0.014 (0.459)	0.014 (0.158)	0.002 (0.903)
	F Stat	3.09	5.70	1.68

Table 4.10: Moderating Effect of Capital Structure Across REITs Sector

Moderating Variable (Mv)	Independent By Mv	Fixed Effect Model		
		Roa	Roce	Roc
Short-Term Debt To Total Debt (Stdtd)	Ce	0.000 (0.774)	0.000 (0.055)*	0.000 (0.036)**
	Cce	0.066 (0.199)	-0.285 (0.007)***	-0.305 (0.011)**
	Stdtd	0.110 (0.205)	-0.053 (0.450)	-0.051 (0.464)
	Cestdtd	0.000 (0.450)	0.000 (0.205)	0.000 (0.091)*
	Ccestdtd	-0.152 (0.054)*	-0.055 (0.295)	-0.111 (0.049)**
	Crisis	-0.062 (0.070)*	0.044 (0.380)	0.044 (0.416)
	Size	0.047 (0.430)	0.081 (0.044)**	0.071 (0.101)
	F Stat	1.70	4.04	7.51
Long-Term Debt	Ce	0.000 (0.361)	0.000 (0.026)**	0.000 (0.011)**
	Cce	0.010 (0.836)	-0.327 (0.000)***	-0.379 (0.000)***
	Ltdtd	-0.012 (0.922)	0.095 (0.262)	0.103 (0.252)
	Celtdtd	0.000 (0.563)	0.000 (0.126)	0.000 (0.076)*
	Cceltdtd	-0.062 (0.583)	0.025 (0.904)	0.038 (0.872)
	Crisis	-0.068 (0.059)*	0.040 (0.380)	0.039 (0.429)
	Size	0.051 (0.417)	0.072 (0.074)*	0.060 (0.155)
	F Stat	1.55	6.76	5.68

Table 4.11: Summary of Hypotheses Based on Fixed Effect Analysis

List of Hypothesis	Outcome
Hypothesis 1: CE has significant effect on ROA across listed firms in Malaysia.	Do not reject
Hypothesis 2: CE has significant effect on ROC across listed firms in Malaysia.	Do not reject
Hypothesis 3: CE has significant effect on ROCE across listed firms in Malaysia.	*Reject*
Hypothesis 4: CCE has significant effect on ROA across listed firms in Malaysia.	*Reject*
Hypothesis 5: CCE has significant effect on ROC across listed firms in Malaysia.	*Reject*
Hypothesis 6: CCE has significant effect on ROCE across listed firms in Malaysia.	*Reject*
Hypothesis 7: CE has significant effect on ROA across listed sectors in Malaysia.	Do not reject
Hypothesis 8: CE has significant effect on ROC across listed sectors in Malaysia.	Do not reject
Hypothesis 9: CE has significant effect on ROCE across listed sectors in Malaysia.	Do not reject
Hypothesis 10: CCE has significant effect on ROA across listed sectors in Malaysia.	Do not reject
Hypothesis 11: CCE has significant effect on ROC across listed sectors in Malaysia.	Do not reject
Hypothesis 12: CCE has significant effect on ROCE across listed sectors in Malaysia.	Do not reject
Hypothesis 13: STDTD has moderating effect on the relationship between CE and ROA across listed firms in Malaysia.	Do not reject
Hypothesis 14: STDTD has moderating effect on the relationship between CE and ROC across listed firms in Malaysia.	*Reject*
Hypothesis 15: STDTD has moderating effect on the relationship between CE and ROCE across listed firms in Malaysia.	*Reject*
Hypothesis 16: STDTD has moderating effect on the relationship between CCE and ROA across listed firms in Malaysia.	*Reject*
Hypothesis 17: STDTD has moderating effect on the relationship between CCE and ROC across listed firms in Malaysia.	Do not reject
Hypothesis 18: STDTD has moderating effect on the relationship between CCE and ROCE across listed firms in Malaysia.	Do not reject
Hypothesis 19: LTDTD has moderating effect on the relationship between CE and ROA across listed firms in Malaysia.	Do not reject
Hypothesis 20: LTDTD has moderating effect on the relationship between CE and ROC across listed firms in Malaysia.	*Reject*
Hypothesis 21: LTDTD has moderating effect on the relationship between CE and ROCE across listed firms in Malaysia.	*Reject*
Hypothesis 22: LTDTD has moderating effect on the relationship between CCE and ROA across listed firms in Malaysia.	*Reject*
Hypothesis 23: LTDTD has moderating effect on the relationship between CCE and ROC across listed firms in Malaysia.	*Reject*
Hypothesis 24: LTDTD has moderating effect on the relationship between CCE and ROCE across listed firms in Malaysia.	*Reject*
Hypothesis 25: STDTD has moderating effect on the relationship between CE and ROA across listed sectors in Malaysia.	Do not reject
Hypothesis 26: STDTD has moderating effect on the relationship between CE and ROC across listed sectors in Malaysia.	Do not reject
Hypothesis 27: STDTD has moderating effect on the relationship between CE and ROCE across listed sectors in Malaysia.	Do not reject
Hypothesis 28: STDTD has moderating effect on the relationship between CCE and ROA across listed sectors in Malaysia.	Do not reject
Hypothesis 29: STDTD has moderating effect on the relationship between CCE and ROC across listed sectors in Malaysia.	Do not reject
Hypothesis 30: STDTD has moderating effect on the relationship between CCE and ROCE across listed sectors in Malaysia.	Do not reject
Hypothesis 31: LTDTD has moderating effect on the relationship between CE and ROA across listed sectors in Malaysia.	Do not reject
Hypothesis 32: LTDTD has moderating effect on the relationship between CE and ROC across listed sectors in Malaysia.	Do not reject
Hypothesis 33: LTDTD has moderating effect on the relationship between CE and ROCE across listed sectors in Malaysia.	Do not reject
Hypothesis 34: LTDTD has moderating effect on the relationship between CCE and ROA across listed sectors in Malaysia.	Do not reject
Hypothesis 35: LTDTD has moderating effect on the relationship between CCE and ROC across listed sectors in Malaysia.	Do not reject
Hypothesis 36: LTDTD has moderating effect on the relationship between CCE and ROCE across listed sectors in Malaysia.	Do not reject

Research Question 4: Does capital structure have moderating effects on the relationship between capital investment and profitability across sectors of listed firms in Malaysia?

Moderating Effect of Capital Structure Across Industrial Products Sector

Based on Table 4.3, the STDTD shows a weak positive significant (Coef = 0.416) moderating effect on the relationship between CE and ROA in industrial products sector. However, the partial effect of CE on ROA is strongly significant in in pooled OLS model. Besides that, SIZE has significant conditional effect on ROA with weak overall independent variable influence on ROA based on F-stat 1.80. The pooled OLS model observed with weak conditional significant effect of CE on ROC in industrial products sector. The findings in Table 4.3 disclose that only SIZE has significant conditional effect on ROA and the weak F stat of 1.80 affirms that all independent by moderating variables are not influencing the ROA. Fixed effect model illustrates weak significant moderating effect of STDTD on the relationship of CCE on ROCE (Coef = 0.150) and ROC (Coef = 0.660). Besides, the CCE's weak partial effect is observable on ROCE and ROC in industrial products.

The model to examine moderating effect of LTDTD with pooled OLS analysis shows insignificant result with ROA. CCE and SIZE recognized to have conditional effect on ROA in industrial products sector. Subject to pooled OLS analysis, the LTDTD moderates the relationship between CE and ROCE at negative modest significant (Coef = -0.868) level. Furthermore, the positive weak significant (Coef = 0.139) moderating effect of LTDTD is observed between the relationship on CCE and ROCE. The model sustained by partial effect of CE and CCE on ROCE.

The weak positive (Coef = 0.641) moderating role of LTDTD in pooled OLS model supported by the effect of LTDTD on the relationship between CCE and ROC together with partial effect of CCE on ROC.
The model affirmed by strong influencing level of independent by moderating variables on ROA with F stat of 10.11 in industrial products sector. In fixed effect model, LTDTD is insignificant on the relationship between capital investment with ROCE and ROC except for week conditional effect of CE on ROC.

Moderating Effect of Capital Structure Across Trading and Services Sector

The OLS moderating effect of STDTD shows strong significant effect (Coef = 0.785, -0.005, and -0.057) on the relationship between three independent by moderating variables and ROA of trading and services sector. In addition, the partial effect of CE and CCE on ROA is also observable. Besides, CRISIS and SIZE has significant conditional effect on ROA with strong overall independent variable influence on ROA based on F stat of 4.85. The significant F stat value of 3.46 affirms that independent variables and control variable are influencing ROCE with significant effect (Coef = 0.014) of SIZE on ROCE. The STDTD perceived as have conditional effect on ROC in pooled OLS model. Besides, CRISIS and SIZE has significant conditional effect on ROA with strong F-stat 8.83 affirms that all independent by moderating variables are influencing the ROA. The identical fixed effect model also illustrates significant effect of SIZE on ROCE.

The pooled OLS model in examining the moderating effect of LTDTD shows significant result of conditional effect of all independent variables, moderating variables, independent by moderating variables (Coef = -0.237, 0.025 and 0.548) and control variables on ROA in trading and service sector. The effect of ROCE is merely signifies by conditional effect of CE and SIZE with insignificant F Stat. The model to examine moderating effect of LTDTD with fixed effect analysis shows significant result CE on ROA (Coef = 0.185). The results show that CE has partial effect on ROA in trading and services sector. Furthermore, the CRISIS and SIZE have conditional effect on ROA. In addition, SIZE has conditional effect on ROCE in the fixed effect model.

Moderating Effect of Capital Structure Across Consumer Products Sector

Table 4.5 reveals the moderating effect of STDTD and LTDTD on the relationship between capital investment and profitability in consumer products sector. Pooled OLS model illustrates significant moderating effect of STDTD on the relationship of CE on ROA (Coef = 0.033) sustained with partial effect of CE on ROA. The regression model furthermore demonstrates conditional effect of STDTD on ROA. Besides, STDTD has significant moderating effect (Coef = 0.052) on the relationship between CCE and ROCE. In the context of fixed effect analysis in consumer products sector, the STDTD have insignificant moderating on the relationship between capital investment and ROA. Highly significant (Coef = 0.630) moderating effect of STDTD on the relationship between CCE and ROC together with weak significant (Coef = 0.351) moderating effect of STDTD on the relationship between CCE and ROCE observed in pooled OLS model.
The model to examine moderating effect of LTDTD with pooled OLS analysis shows significant result with ROA. CE (Coef= -0.047) with ROA are moderated by LTDTD with partial effect of CE on ROA. The conditional effect of CCE and STDTD are noticeable on ROA in pooled OLS model. On top of that, the CCE and ROCE (Coef = -0.021) relationship influenced by modest significant (Coef = -0.021) moderating effect of LTDTD with partial effect of CCE on ROA. Based on fixed effect analysis, the LTDTD is an insignificant moderator on the relationship between capital investment with ROA and capital investment with ROCE. Conditional effects of CE on ROA are identified in fixed effect analysis. In addition, the conditional effects of CCE on ROCE and effect of CCE on ROC are observed in fixed effect analysis. The fixed effect result also shows highly significant negative moderating effect of LTDTD on the relationship between CCE and ROC.

Moderating Effect of Capital Structure Across Technology Sector

Table 4.6 illustrates the moderating effect of STDTD and LTDTD on the relationship between capital investment and profitability of technology sector in Malaysia. CE effect on ROA shows significant result (Coef = -0.021 and 0.699) which is strongly moderated by STDTD. SIZE shows significant conditional effect on ROA. On the other side, the STDTD have significant effect on the relationship of CE with ROCE and CE with ROC. The effects are supported by partial effect of CE on ROCE and ROC in pooled OLS model. The pooled OLS model of LTDTD similarly observed with strong significant effect (Coef = -0.768) of STDTD on relationship between CE. The significant F stat value of 9.61 affirms that independent variables and control variable are influencing ROA. Besides, the LTDTD perceived as moderating effect of relationship between CE and ROCE.
The finding of fixed effect model in analyzing moderating effect of STDTD signifies the effect on relationship between CE-ROA supported by significant partial effect of CE on ROA. Besides, CRISIS and SIZE has significant conditional effect on ROA with strong F stat of 8.83 affirms that all independent by moderating variables are influencing the ROA. The identical fixed effect model also illustrates significant effect of SIZE on ROCE.

Moderating Effect of Capital Structure Across Properties Sector

Based on Table 4.7, the STDTD shows modest negative significant (Coef = -0.041) moderating effect on the relationship between CCE and ROA in properties sector with partial effect of CCE on ROA in pooled OLS model. However, SIZE has strong significant negative conditional effect on ROA. Correspondingly, the finding shows modest negative conditional effect on ROCE and ROC in pooled OLS model. The findings in Table 4.7 disclose that LTDTD of properties sector equipped moderating effect only on the relationship between capital investments on ROA in pooled OLS model. The LTDTD has modest significant positive significant effect (Coef = 0.037) on the relationship between CCE and ROA. In opposition, CCE observed with modest negative significant partial effect on ROA. Subsequently, SIZE has significant conditional effect on ROA and the strong F stat of 23.22 affirms that all independent variables, control variables and independent by moderating variables are influencing the ROA.

Moderating Effect of Capital Structure Across Construction Sector

Table 4.8 shows the moderating effect of capital structure (STDTD and LTDTD) on the relationship between capital investment and profitability in the construction sector of Malaysia. The variables in pooled OLS model in properties sector are significantly effects ROA except CRISIS. The STDTD is highly significant (Coef = 0.827 and 0.157) in moderating the relationship between CE –ROA. The moderating effect is observed along the partial effect of CE and CCE on ROA. Besides, SIZE has significant conditional effect on ROA with strong overall variable influence on ROA based on F stat of 9.01. In addition, the pooled OLS model explains the weak positive significant (Coef = 0.118) moderating effect of STDTD observed with negative conditional effect between CCE and ROC.
The fixed effect model indicates STDTD moderating effect on capital investment and ROA in properties sector. The STDTD has

a weak negative significant (Coef = 0.331) moderating effect on the relationship between CE and ROA with modest positive significant (Coef = 0.331) moderating effect on the relationship between CCE and ROA. In addition, modest negative significant (Coef = -0.888) effect of STDTD on the relationship between CE and ROCE with weak positive significant (Coef = 0.000) of STDTD on the relationship between CCE and ROCE. The SIZE observed with weak significant effect on ROCE. The fixed effect model also does indicate the conditional effect of STDTD and SIZE on ROC in properties sector.

Table 4.8 shown that the model has significant conditional effect of CCE and LTDTD on ROA. The LTDTD moderating effect likewise observable with weak negative significant effect (Coef = -0.081) on the relationship between CCE and ROCE. In contrast, a weak negative significant conditional effect of LTDTD on ROC is observed.

The fixed effect analysis shows strong positive significant (Coef = 0.450 and 0.000) moderating effect of LTDTD on the relationship between CE and ROCE. Similar effect noticed with ROC as the dependent variable. The LTDTD have significant positive (Coef = 0.480 and 0.000) moderating effect between CE and ROC in fixed effect. However, partial effect of CE is observable on ROA.

Moderating Effect of Capital Structure Across Plantation Sector

Table 4.9 reports findings for moderating effect of capital structure on the relationship between capital investment and profitability in the plantation sector. The relationship between CE and ROA is moderated by LTDTD at negative modest and weak significant level (Coef = -0.002). Conditional effects of STDTD and SIZE on ROA are recognized in similar regression model with F stat of 17.89 signifies the influential variable in regression with ROA. On top of that, SIZE has strong positive significant effect on ROCE and ROC in STDTD pooled OLS regression model. The dissimilar result obtained in analyzing ROC as the dependent variable. The STDTD show positive but weak significant (Coef = 0.000) moderating effect on the relationship between CE and ROC.

The findings of pooled OLS analysis on LTDTD as moderating variable in Table 4.9 disclosed that only SIZE has significant conditional effect on ROA and the weak F stat of 1.80 affirms that all independent by moderating variables are not influencing the ROA. Fixed effect model illustrates weak significant moderating effect of STDTD on the relationship of CCE on ROCE (Coef = 0.150) and ROC (Coef = 0.660). Besides, the CCE's weak partial effect is observable on ROCE and ROC in industrial products.

The model to examine moderating effect of LTDTD with pooled OLS and fixed effect analysis shows insignificant result. LTDTD moderating effect is unobservable in the plantation sector. The CE, LTDTD and SIZE have significant conditional effect ROA in pooled OLS model. Whereby, SIZE has significant conditional effect on ROCE and ROC. On the other side, fixed effect model only signifies conditional effect of CE on ROA with significant F stat of 3.09.

Moderating Effect of Capital Structure Across REITs Sector

The moderating effect of capital structure (STDTD and LTDTD) on the relationship between capital investment and profitability of REITs sector is shown in Table 4.10. A strong trend toward positive significant (Coef = 0.692) moderating effect is predicated on the relationship between CE and ROA. On top of that, the negative but weak significant (Coef = -0.334) moderating effect LTDTD is noticeable on the relationship between CCE and ROA with partial effect of CCE on ROA. Besides, STDTD and SIZE have conditional effect on ROA. The pooled OLS model merely shows significant conditional effect of CCE on ROCE and ROC together with conditional effect of SIZE on ROCE.

Based on fixed effect model, the STDTD have negative and weak significant (Coef = -0.152) moderating effect on the relationship between CCE and ROA with conditional effect of CRISIS on ROA. In relation with ROCE, the CE, CCE and SIZE has significant conditional effect on ROCE. The relationship between CE and ROC is moderated by STDTD at positive but weak significant (Coef = 0.000) level with significant positive partial effect of CE on ROC. Besides, the modest negative significant (Coef = -0.111) of STDTD observed on the relationship between CCE and ROC with negative significant partial effect of CCE on ROC.

The LTDTD in pooled OLS model in Table 4.10 shows significant negative (Coef = -0.915) but strong moderating effect of STDTD on the relationship between CE and ROA with partial effect of CE on ROA. The analysis model similarly reveals the moderating effect of STDTD on the relationship between CCE and ROA at strong positive significant (Coef = 0.395) level. Correspondingly, the SIZE has a significant conditional effect on ROA. Based on the pooled OLS model, the STDTD has weak significant moderating effect on the relationship between CE - ROCE (Coef = -0.254) and CE – ROC (Coef = 0.000) with partial effect of CE on ROCE and ROC. Respectively, the CCE have conditional effect on ROCE and ROC.

The two independent variables show significant conditional effect on ROCE and ROC with significant conditional effect of SIZE on ROCE. In addition, the fixed effect model in analyzing the LTDTD shows negative and weak significant moderating effect of LTDTD on the relationship between CE and ROC.

The moderating effect varies across sectors, therefore the hypotheses 25 to 36 are not rejected as the capital structure moderates the effect on the relationship between capital investment on profitability across sectors in Malaysia.

6. Discussion

Research Objective One: To Examine the Effects of Capital Investment on the Profitability across Listed Firms in Malaysia

Findings of this study based on the effects of capital investment and profitability across Malaysian listed firms demonstrated that capital investment has a significant effect on profitability across listed firms in Malaysia. Return on asset and capital has significant positive effects on capital expenditure across Malaysian listed firms. These findings are concurrent with the studies of Jiang[41] conducted in a developing country. In addition, return on asset indicated a positive significant effect on firm size for data across listed firms in Malaysia. However, current capital expenditure (CCE) was seen to have an insignificant effect on profitability across the firms. In general, the accumulated capital expenditure (CE) takes several years for firms to undertake investment projects in long-term assets. Upon completion, the potential benefit of capital projects may last for several years. Meanwhile, the partition of current capital expenditure may not have the ability to generate profitability to the firm. The significant positive effects of capital investment on profitability confirmed the concept of capital investment that the capital investment acquisition is expected to increase future benefit of the firm.

The ROC of this study measures the return generated by all sources of fund such as capital, debt and equity that invested on fixed assets of the firm. ROC is the return earned on the capital invested in existing assets assuming that the book values of debt and equity effectively measures this capital investment. Pooled OLS showed an insignificant effect of CE on ROC across firms. However, as the cross-section was fixed, the significant positive effect of CE on ROC was noticeable.

The CE was observed to give significant positive effects on return of the firms from available capital based on fixed effect analysis. This finding suggests that listed firms in Malaysia with enormous book value capital investment tend to generate lower return on asset. The accumulated capital investment carries the impact of irreversibility on investment for long-run due to after event effect (hangover effect). The hangover effect of irreversible capital in-

vestment raises the cost of capital and discourages disinvestment. Researchers concurrently highlighted that capital investment has a significant negative relationship with profitability [45, 46]. Furthermore, capital investment was seen as deliberate investment decision since lengthy time and attention are required by the financial managers to make investment decision. However, the cost benefit issues have led to the interrelation between capital investment and financial decision in the firm. Consequently, the effects of accumulated capital investment to return were seen generally negative for the firms in financially undeveloped countries. According to Shankaran [47], higher cost of external long-term debt restraint to obtaining those funds can eventually lead the firms to fully utilize internal funds for capital investment. Hence, the negative relationship between capital investment and profitability is evident. On the other hand, according to Tamirat [48], the capital investment may provide a positive signal to capital market if the expenditure occurred in tangible asset is predicted to furnish future cash inflows where capital investment in the intangible asset is highly uncertain for predicting future cash inflows.

Research Objective Two: To Examine the Effects of Capital Investment on the Profitability across Sectors of Listed Firms in Malaysia

The effects of capital investment on the profitability across sectors in Malaysia were found unique and significantly different from each other. One of the reasons for the diverse result was due to the different sample of firm size based to each sector nature of business. Although the large sample and sector dispersion of the listed firms included in the analysis increased the external validity of the results, the sample size was very different for each sector. Firms may experience the decreasing return to scale. Empirical data from Hong Kong showed that there were only a very small number of "over-sized" construction firms operating beyond the optimal size. This suggests that the construction companies in Hong Kong are profit orientated and would not expand beyond the optimal investment level to achieve other non-profit objectives including expending the empire. Large firms have high cash flows – investment sensitivity. This is because large firms have more flexibility in the investment market timing due to active transactions. Therefore, the effects of capital investment on profitability were seen to vary across sectors due to the size of the firm and investment active level.

All sectors except construction and REITs suggested positive relationship between capital investment and profitability. This purposed accurate proposition and concept of capital investment, which is acquired to generate the benefit of more than one year to the firm. The hypothesis presumes that the market forces firm managers to maximize firm's market value while making their corporate capital investment.

Research Objective Three: To Investigate the Moderating Effects of Capital Structure on the Relationship between Capital Investment and Profitability across Listed Firms in Malaysia

The findings showed that short-term debt has a moderating effect on the relationship between capital investment and profitability. According to the study on the direct effects between capital investment and profitability in research objective one, the capital expenditure and size demonstrated positive significant effects on return on asset. On the other hand, capital investment gave insignificant effects on return on capital employed and return on capital across firms. However, as the capital structure included in the regression, the moderating effects of short-term debt were noticeable. Thus, the significant negative effects of current capital expenditure on return on capital employed and return on capital were then manifested.

The short-term debt was observed to give significant negative moderating effects on the relationship between capital investment and profitability. These findings suggest that the short-term financing to acquire capital investment is a financing mismatch where the cost of short-term financing has actually outstripped the benefit from capital investment. Similarly, short-term debt characteristic is supported by negative relationship of short-term debt to total asset with firm's profitability [49]. Short-term debt involves a higher cost of financing that may reduce the incentive to invest due to the large exposure to default risk from more frequent debt rollover.

Malaysia's capital investment motives may be another resemblance of negative moderating effects of capital structure (short-term debt) on the relationship between capital investment and profitability across firms. Consistent with Dunning [50] the investment motives are widely varied depending on the country of origin of the capital investment. The concentration on short-term projects for immediate profit (short termism) at the expense of long-term fixed asset by short-term financing may lead to negative profitability. Hence, the short termism in emerging countries may lead to the mismatch between short-term debt and short-term profitability.

The moderating effects of capital structure (long-term debt) on the relationship between capital investment and profitability across firms in Malaysia, it was presented that long-term debt has moderating effects on the relationship between capital investment and profitability. In line with the direct effect examination in research objective one, the capital expenditure and size demonstrated positive significant effects on return on asset. Meanwhile, the capital investment was observed to give insignificant effects on return on capital employed and return on capital across firms. Similarly, as the capital structure included in the regression, the moderating effects of long-term debt were only noticeable between the current capital expenditure and return on asset.

The long-term debt financing had given a strong positive effect on capital investment and profitability across firms in Malaysia. The variation in the moderating effects result obtained between short-term debt and long-term debt moderating effect on the relationship between capital investment and profitability were explained by pecking order theory. Firms see the issue of external equity financing as being the most expensive and also risky regarding potential loss of power. Thus, the advantage to the business owner or corporation is maximized by issuing the long-term debt for capital investment compared to short-term debt at an expensive cost.

The short-term debt positive effects on the relationship between current capital expenditure on return on capital employed and return on capital were found similar to debt holder argument of Jensen [51]. This finding might be because the debt holders across highly leveraged firms are interested to prevent managers to take up projects with little probability of success. Thus, the empire building intention is avoided across firms. In the event where the project is successful, the manager will assemble firm's value and when the project fails, the debt holders will experience most of the project's costs in short-term. Besides, highly levered firms were seen facing more risk of bankruptcy with management that can become unemployed when the firm goes bankrupt or gets taken over by another firm. Therefore, this study concluded that moderating effects of capital structure was noticeable on the relationship between capital investment and profitability across firms in Malaysia and supported the theory of empire building in agency cost.

Research Objective Four: To Examine the Moderating Effects of Capital Structure on the Relationship between Capital Investment and Profitability across Sectors of Listed Firms in Malaysia

The study results revealed that capital structure significantly affects the relationship between capital investment and profitability across sectors. Meanwhile, fixed effect analysis shows the moder-

ating effect of short-term debt was maintained similarly in all sectors except for consumer products and REITs sectors.

The fixed effect result identified significant positive effects of short-term debt on the relationship between capital investment and ROC. Fixed effect analysis allows identifying the unbiased effect of capital investment on return on capital. This unbiased effect might be noticeable as the money entrusted to generate profit has exactly demonstrated the nature of capital investment where the ROC is an essential variable that shows the return generated out of the capital of the firm.

The analysis across the eight sectors suggested that the means of sector are significantly different from each other. This was due to the different capital intensity of sectors, where high growth sectors will have much higher capital investment compared to lower growth sector. Fama [52] showed that equity issuance may violate the pecking order theory due to firm size and economy of scale involved. Thus, the equity financing may offer a substantial impact on firm's capital structure based on firm's size. Capital market imperfections including the asymmetric information and high cost of debt may influence the capital intensity of each sector financing decision. The high capital investment has placed the firms to establish different financing need, which led to the different moderating effects of the capital structure on the firms and the sectors eventually.

The short-term debt has moderated the effects of the current capital investment on profitability negatively for industrial products sector. Thus, this indicates that short-term debt has essentially led to an inverse relationship between the changes in capital investment and profitability. Malaysia's largest manufacturing industry, industrial products specifically electrical machinery recorded the highest reduction during financial crisis among the other sectors due to its high dependency on exports [55]. Furthermore, plunging exports had already brought down electronics production by -4.1% in the third quarter of 2008 and -27.8% in the fourth quarter of the same year (UDPN, 2009). Undoubtedly, the debt-reliant sectors were challenged with a high cost of capital that may lead to a reduction in profitability on top of the reduction in sales.

Based on trading and services sector, the short-term debt moderated the effects of capital investment on return on asset positively. The moderating effect result demonstrated similar effects as the direct effects of capital investment. Thus, it was strongly proven that trading and service sectors are independent on debt financing for the firm's capital investment. Large firms tend to accumulate debts to support and keep up with the payment of dividends while small firms tend to behave in opposite behaviour, which is strongly supported by the pecking order theory that a firm must consider using an optimal capital structure. The optimal capital structure includes some debt, but not 100% debt. In other words, it is a "best" debt/equity ratio for the firm, which in turn can minimise the cost of capital including the cost of financing the company's operations. In addition, it can further reduce the chances of bankruptcy.

Capital investment affected the return on capital of firms in consumer products sector. The short-term debt and long-term debt moderated the effects of capital investment on return on capital. The short-term debt moderated positively and long-term debt moderates negatively [56]. Thus, capital structure gave moderating effects on the relationship between capital investment and profitability. The consumer products sector was the second largest non-financial sector after plantation sector in the year 1998 [43]. However, the consumer goods and services inflation showed a falling trend from 8.51% in July 2008 to 3.05% in April 2009, which is a consequence of oil prices falling gradually [43]. Therefore, the consumer goods and service sector are probably most highly dependable on debt irrespective of the term of debt.

Hence, a debt market could complement the functions of the financing activity in consumer products sector for an efficient capital allocation. These findings supported those of Fama [52] estimating that the return on capital of growth firms was increased before portfolio formation through empire building. Thus, managers expanded capital investment and production until marginal earnings return achieved the competitive equilibrium levels. Hence, the investment return on capital was seen equal to the firm's equity return in the absence of financial friction. Many studies on capital structure conducted in developing countries support the pecking order theory. However, the pecking order theory does not emphasize on short-term or long-term debt as a preference of external financing.

These findings imply that an increase in debt position is associated with a decrease in profitability; thus, the higher the debt, the lower the profitability of the firm. The results also displayed that profitability increases with control variables; size and sales growth. This may be because of the economic downturn in Jordan. During the economic downturn, sales level tends to go down causing cash inflow problems for the corporations. Consequently, firms started defaulting liability payments. Therefore, it is important for lenders to understand and review cash flows, the level of assets and liabilities, market value and volatility of the company assets, and liquidity of assets on a yearly basis to control the companies. This, in turn, can reduce the default risk and will minimize losses for the lending institutions. Although the financial leverage provides tax benefits to the corporations, it increases the default risk of lending institutions such as banks, credit unions, and other private lenders. Default risk is defined as the uncertainty surrounding a firm's ability to service its debts and obligations within specified time periods (less than one year for current liabilities or more than one year for long-term liabilities). As leverage increases, not only does the potential return in Jordan decrease, but also a firm's ability to service its debt has eroded with the rise in risk of credit default. The debt also increased the danger of corporate illiquidity when the economy next experienced a recession. To improve the efficiency, it is important for the lending institutions to understand the default risks of a firm in different industries such as service and manufacturing.

The conflict between management and debt holders may develop agency cost and the empire building theory applied as the conflict is relevant to capital investment [53]. However, the managers' interest to increase firm's value and growth leads is mainly focused on increasing their incentive and power. Increase in wealth and power of management is not included in the interests of shareholders, thus leading to the increase in agency cost [51]. Therefore, the moderating effects of capital structure varied across sectors based on the equity and debt portion of the capital structure across sectors.

The outcomes of this study can make several contributions to the literature and policy implication where the findings contribute to the body of knowledge on capital structure theory with mixed findings and empirical evidences on emerging economy. Essentially, this research extended the studies of Jiang[41] that highlight the positive effects of capital investment on profitability. Based on the policy implication point of view, better understanding on the effects of capital investment on profitability will position the firms in Malaysia's non-financial sectors to undergone mass R&D activity, which may lead to a high production generating additional income to the country. The tax incentives policy implementation may play significant role in influencing economic development where Malaysia looks at capital investment as the roadmap to achieve the future growth and eventually the Vision 2020, which is to become a self-sufficient industrialised nation. At the same time, this study can also enlighten the financial officer's burden as sound asset management may avoid serious problems that include corporate insolvency. On top of that, the parties involved in emerging capital market in Malaysia with sufficient understanding on capital investment and profitability can lead to better investment strategies [56, 57].

Secondly, this study also fills the gap of empirical evidence across sectors in Malaysia. The preceding studies showed their understanding in the positive effects of capital investment on profitability in developing countries across firms [41]. However, based on author's best knowledge, fewer studies have evidenced their understanding in the effects of capital investment on profitability across sectors. This study is crucial as it fills the gap of

knowledge by addressing the effects of capital investment on profitability across sectors in Malaysia. In addition, the novelty of this study was demonstrated by the findings on the moderating effects of capital structure on the relationship between capital investment and profitability in Malaysia across firms and sectors.

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