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Ceo Age and The Dynamic Capital Structure: Evidence from Malaysia

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ABSTRACT

This paper aims to investigate the dynamic capital structure of Malaysian firms from upper echelon perspective. Specifically, we test the speed of adjustment towards the target leverage and the age of Chief Executive Officers (CEOs) as a determinant of dynamic capital structure. Utilisation of the System Generalized Method of Moments finds 33.93% of speed of adjustment for Malaysian firms. The CEOs age is also found to be inversely related to both the optimum leverage and speed of adjustment towards the optimum leverage. As the CEOs age increases, the optimum leverage and speed of adjustment decrease. Our results are robust using the long-term leverage while controlling several firm characteristics that are known to impact the firm's capital structure, year of effect, and industry fixed effect. The results suggest that CEOs age is a potential factor of Dynamic Capital Structure decision. The findings also highlight the failure of older CEOs in maximising the benefits of debt interest tax shield which prompts higher financial costs and lower firm value. The practical implication of our study lies on the need to attentively look at the CEOs age while hiring a qualified CEO that could improve the firms' performance.

INTRODUCTION

Capital structure decision is one of the controversial financial issues. Numerous theories such as the trade-off theory, pecking order theory, agency theory, and market timing theory have been tested to study the capital structure behaviours. However, inconclusive answer has been provided to explain the firm capital structure and remains unresolved. The study focuses on the trade-off theory.

Optimal Capital Structure/ Leverage (hereafter OL) is a decision that maximises the firm value by trading off the marginal benefits and costs of an additional unit of debt. The firms are unlikely to reach the OL in the presence of market frictions as debt finance is associated with adjustment costs (Banerjee, Heshmati, & Wihlborg, 2004). Furthermore, the OL model would sideline the opportunity to explain the dynamic nature of capital structure. Additionally, the opponents of OL adds to the shortcoming of OL model to capture the long-run capital structure determinant (Banerjee et al., 2004; Nor, Haron, Ibrahim, Ibrahim, & Alias, 2011). Based on these reasons, dynamic trade-off capital structure theory is aptly relevant in studying the capital structure.

Studies on the dynamic trade-off capital structure are mainly focusing to find the determinants of the capital structure adjustment. In this perspective, the researchers have fundamentally considered the firm characteristics such as profitability, size, growth, distance from the target leverage to investigate the Speed of Adjustment (SOA). Macroeconomic factors such as economic growth and inflation are significant determinants in the SOA decisions. Recently, the severity of agency conflict (Buvanendra, Sridharan, & Thiyagarajan, 2018; Liao, Mukherjee, & Wang, 2015; Morellec, Nikolov, & Schurhoff, 2012) has been highlighted to potentially explain the heterogeneity of the firms SOA. Such scenario assumes the SOA decision lies on the hand of managers/ Chief Executive Officers. Still the studies only implicitly reveal the importance of CEOs to define the SOA. For further understanding on this perspective, this study explicitly investigates the CEOs talent and ability on the firms SOA.

The Upper Echelons Theory (UET) emphasises the importance of upper echelons/ CEOs to define the strategic decisions and performance of the firms (Hambrick & Mason, 1984). The CEOs are believed to use their cognitive bases and personal value to interpret and translate the available information before making one decision (Hambrick & Mason, 1984). Demographic characteristics are often applied to represent those aspects as it is hard to observe the cognitive bases and personal value. Despite the widely discussed effects of CEOs talent and ability in the empirical studies, scarce literature has focused on the direct relationship of CEOs talent and ability and dynamic capital structure. The scarcity from this side motivates the study to investigate the matter.

The literature on capital structure has largely accounted from developed countries and leaves disparity evidence from the emerging countries especially from Malaysia. Lack of corporate financial data in the Asia pacific region has constrained the previous research (Haron, 2014a). In Malaysia, the capital structure studies are mainly concentrated on the static trade-off theory to explain the firms' OL decisions. Still, the literature falls short in clarifying the capital structure from the dynamic perspective. Studies from Malaysia setting such as Nejad & Wasiuzzaman (2013) and M'ng, Rahman, & Sannacy (2017) have predominantly looked at the capital structure decisions without the consideration of adjustment costs. Researchers such as Nejad and Wasiuzzaman (2015), Ting (2016) and Matemilola, Bany-Ariffin, Azman-Saini, and Nassir (2017) have accounted the dynamic nature of capital structure and concluded firms have constantly adjusted towards the target OL within certain range of SOA. Yet, these studies provided less incentive to further examine the determinant of SOA. A study by Haron (2014b) solely extends the dynamic capital structure model to include the speed of adjustment model in examining the determinants. The paucity on this matter has created the awareness to study the determinants of SOA from CEOs fixed effect perspectives in Malaysia. Various proxies have been applied to represent the CEOs talent and ability. Researchers such as Cheung, Naidu, Navissi, and Ranjeeni (2017) and Lin, Hu, and Li (2018) use organisational capital indices to quantify the CEOs ability. Yet, Mishra (2014) proclaimed the weakness of the indices to direct measure the human capital while the CEOs themselves could provide more direct measures of talent and ability of the CEOs. The CEOs demographic characteristics are the main interest of this study because these characteristics help in shaping the financing decisions and attitude towards risks (Malmendier, Tate, & Yan, 2011; Serfling, 2014). In this sense, this study aims at readily observable characteristic – CEOs age which is the length of time the CEO has lived. (Wang, Holmes, Oh, & Zhu, 2016).

Age is a complex construct that acts as a proxy for various underlying values, traits and cognitive bases. Despite the importance of age, little evidence has been provided in regard to CEOs age and capital structure (Thijssen, 2017). Generally, studies that integrating CEOs age into their model highlight the conservative nature of older CEOs in making risk related decisions as they are already nearing their retirement (Barker & Mueller, 2002; Farag & Mallin, 2018). In contrast, older CEOs possess more knowledge with complex and well-developed cognitive schema, giving them more competitive strategic choice to generate higher return (Wang et al., 2016). If the CEOs age is following the first proclamation, CEOs age is expected to inversely influence the target leverage and SOA. However, they would have better ability to manage more leverage and improve the SOA if they follow the second proclamation. It is important to study the determinants of non-optimal capital structure especially from CEOs fixed effect perspective because it may cause the firms to lose the opportunity to maximise the shareholders' wealth (T. Mukherjee & Wang, 2013) due to expensive financial cost to raise the capital (Amjed & Shah, 2016; Globerman, Peng, & Shapiro, 2011). At the same time, CEOs are the key person in executing the firms policies and operation while their age is likely influence their risk perception towards the firms' financial decisions.

This study attempts to investigate the effect of CEOs age on both the target leverage and SOA. Hence, the dynamic capital structure is employed to study the Malaysian firms from 2007 to 2017. Unlike previous studies that examine the determinant of capital structure in Malaysia, our study we extends the dynamic model (see Nejad and Wasiuzzaman (2015), Ting (2016) and Matemilola et al. (2017)) into speed of adjustment model to examine both the determinants of target leverage and speed of adjustment leverage. The study differs from previous studies as this study separates the CEOs fixed effect from dynamic model to directly examine the influence of CEOs age as the determinant for target leverage and speed of adjustment. Our study has successfully proven CEOs age is not only negatively associated with optimal capital structure decision but also the SOA target leverage. The finding is robust by controlling several firm characteristics that are known to impact the firm's capital structure such as year of effect, industry fixed effect and the use of System Generalized Method of Moments. Our finding is closely linked to Ting, Azizan, and Kweh (2016). However, the use of the dynamic trade-off theory instead of the static trade-off theory to explain the CEOs age as a capital structure determinant makes our finding more relevant to the real world situation. The relevance is driven by consideration of the possible of transaction costs in capital structure model. Thus, we support our proclamation and suggest that CEOs age is a potential factor that influences the dynamic capital structure.

Studying the implication of CEOs on the firms' strategic decision in Malaysia can be challenging because Malaysia is claimed to be following the collectivism culture – group decision making (Antonczyk & Salzmann, 2014) rather than individualism. In such culture, the

CEOs decision would be partly influenced by the group and they tend to act according to the interest of the group (Li, Munir, & Abd Karim, 2017; Matemilola et al., 2017). Unlike their perception, the older CEOs in this study tend to follow their own short career horizon and risk-averse towards the firms' capital structure. They are less inclined to use more debt and adjust quicker towards the target leverage contrary to the expectation by the shareholder. Hence, we add to the literature of the role of CEOs in the midst of collectivism culture.

Part of our study results also makes practical contribution. Under Section 129 of the Malaysian Companies Act 1965, directors aged 70 and above have to offer themselves for re-appointment every year. Nevertheless, the Companies Act 2016 puts no age limit for directors which allows those over 70 years old to serve the firms until they retire, removed or expire naturally (Muhiudeen, 2017). Our study recommends the policy maker to consider the mandatory retirement age for CEOs because older CEOs tend to impair the financial performance especially on the Malaysia firms' capital structure.

The rest of the paper is organised as follows. Section 2 reviews the literature. Section 3 describes the data and methodology. Section 4 discusses the findings and results of the study. Section 5 concludes the study.

LITERATURE REVIEW

Lagged Leverage

Dynamic Trade-off Capital Structure (Kane, Marcus, & McDonald, 1984) is an extended theory of Static Trade-off Capital Structure Theory which relaxed the assumption of no transaction costs of the MM Irrelevance Theory (Fischer, Heinkel, & Zechner, 1989). The theory emphasised the inability of the firms to adjust the OL from previous period to the current period because the recapitalisation costs prevented an instantaneous adjustment of the actual leverage to the target leverage. In such circumstances, the firms' capital structure was merely the observed target leverage. The adjustment from previous period to the current period was known as the Speed of Adjustment (SOA) and determined by the coefficient of lagged leverage. Since then, the researchers estimated the SOA based on the observed target leverage that was attributed by the firm characteristics, macroeconomic factors, institutional settings and conditional effects.

Flannery and Rangan (2006) and Lemmon, Roberts, and Zender (2008) estimated the SOA based on the leverage attributed by the firms characteristics. Specifically, the SOA were found at 34.4% and 25% for Compustat firms based on different GMM and System GMM, respectively. Apart Compustat firms evidence, researchers such as Nor, Haron, Ibrahim, Ibrahim, and Alias (2011) and Yang, Albaity, & Hassan (2015) conducted the dynamic capital structure studies in Asian countries. Specifically, Nor et al. (2011) reported the average SOA of 57%, 28.04%, and 65.45% for Malaysia, Thailand, and Singapore, respectively. Yang et al. (2015) showed 36.7% SOA for Chinese firms. The estimated SOA were based on firm characteristics and macroeconomic factors in Nor et al. (2011) and Yang et al. (2015) with addition of the human resource factors. Based on nine African countries, Etudaiye-Muhtar and Ahmad (2015) reported an average SOA of 57.3% while Ahmad and Etudaiye-Muhtar (2017) reported an average SOA of 68.2% for a single African countries (Nigerian). Both studies attributed the OL based on firm characteristics and macroeconomic variables. Analysis on bigger sample by Getzmann, Lang, and Spremann (2015) found the average SOA of 25%-45%, 41%-65%, and 39-60% for Asia, Europe and the USA firms, respectively. Other than that, countries operating under market based and bank based (Drobetz, Schilling, & Schroder, 2015; Lööf, 2004) were also reported to have different SOA. Good and low economic condition (Cook & Tang, 2010; Soekarno, Kitri, & Utomo, 2015) were also substantiated as factors for the heterogeneous level of SOA. As firms in past studies continuously adjusted the current leverage to meet the target leverage, our study is formulated to identify the significant lagged leverage with target OL..

H1: There is a range of speed of adjustment towards the target leverage in Malaysia.

CEOs' Age

The CEOs were known as the most strategic decisions for firms performance. The proclamation of UET (Hambrick & Mason, 1984) affirmed the influence of CEOs age on the cognitive bases and personal value of a CEO. Older and younger CEOs have different perception towards risk activities that could translate into the firms strategic decisions such as firm capital structure. Older CEOs were arguably more risk averse/less risk tolerance as they were only a few years away from retirement. Hence, they would try to avoid any move that did not personally benefit them or involved long term pay-off return (i.e. shorter career horizon). They were conservative in making corporate decision than the younger CEOs (Barker & Mueller, 2002; Bertrand & Schoar, 2003; Chen, Zhang, & Liu, 2014; Farag & Mallin, 2018; Graham, Harvey, & Puri, 2013). In addition, older CEOs were difficult to grasp new ideas, learn new behaviour, perform less quantitative ability, and exhibit non-multitasking (Barker & Mueller, 2002; Cline & Yore, 2016). As such, their ability followed a descending order as posited in inhibitory deficit theory (Cline & Yore, 2016). The literature also pointed the potential higher conflict of interest between older CEOs and shareholder as they were more motivated to fulfill their own interests rather than serving the shareholders interest (Bialowas & Sitthipongpanich, 2014; P. Nguyen, Rahman, & Zhao, 2018).

Barker and Mueller (2002) reported lesser research and development expenses as CEOs grew older while Bertrand and Schoar (2003) reported that older CEOs in the US firms made lower capital expenditure, lesser debt and higher cash holdings. Serfling (2014) found a declining risk preference for aged CEOs. Specifically, the older CEOs choose to invest less in research and development, make more diversifying acquisitions, diversify the operation to reduce the firm riskiness, use less operating leverage, and underperform. Zhou and Wang (2014) concluded that older CEOs preferred lower volatility of corporate earnings and debt for Chinese firms. Ting et al. (2015) documented an inverse relationship of CEO age and firm leverage decision for Malaysian firms because they favoured internal funding instead of external funding. Cline and Yore (2016) showed increases of CEO age led to decreases of firm value, operating performances and corporate deal-making activity of US firms. Farag and Mallin (2018) exhibited risk aversion behaviour of older CEOs towards the total and firms specific risks of Chinese firms. Nguyen et al. (2018) indicated the shorter career horizon of older CEOs who only preferred for short-term less risky project for Australian firms.

In contrast, Nguyen et al. (2018) asserted that older CEOs may help to improve the firm performance based on their experience. Huang, Rose-Green, and Lee (2012) claimed higher ethic and transparency for older CEOs which helped to lower the firms cost of capital and improved the firm performance. Thijssen (2017) added that younger CEOs are more conservative because they had shorter track-record, less achievement, more scrutinised by the labour market, and more concerned about their career. All these implicitly signed an improvement in the managerial efficiency as the CEOs grew older. Thus, linking an increase in age to greater knowledge, experience, and networking was relevant (Bertrand & Schoar, 2003; Graham et al., 2013; Kayhan, 2008; Kuo, Wang, & Lin, 2015; Sitthipongpanich & Polsiri, 2015), hence the probability of older CEOs using more debt and accelerate the SOA.

Empirically, Huang, Rose-Green, and Lee (2012) reported improvement in financial reporting quality as the CEOs grew older. Peni (2014) and Kuo, Wang, and Lin (2015) portrayed a positive influence of older CEOs on the US firm financial performance. Likewise, Malmendier et al. (2011) found that CEOs who served in the world war II (also a proxy to measure age) were more risk tolerance and used more debt. Nevertheless, Sitthipongpanich and Polsiri (2012) found insignificant relationship of CEO age with firm debt for Thailand firms. Graham et al. (2013) also reported insignificant relationship of CEOs age with debt ratios, short-term debt, and acquisition decisions based on the survey of US and non-US firms. Last but not least, Frank and Goyal (2009b) showed that CEOs who were more than 55 years old had no impact to the speed of leverage adjustment for US firms.

As seen from the past inconclusive findings, it was hard to predict the exact relationship of CEO age with the target leverage and speed of adjustment. However, majority of the researchers predicted a significant relationship. Thus, we formulate the following significant hypotheses:

H2a: There is a significant relationship between CEOs age and target capital structure in Malaysia.

H2b: There is a significant relationship between CEOs age and speed of adjustment towards the target leverage in Malaysia.

Firm Characteristics

Conventionally, the firms' characteristics such as firm size, profitability, asset tangibility, non-debt tax shield, and firm growth were the factors to influence the firms' capital structure. The literature recorded contradicting results on the significance of these characteristics. The relationship was supported by the Trade-off Theory (TOT) and Pecking Order Theory (POT). The TOT emphasised on optimal target leverage while POT pointed no optimal leverage as firms followed hierarchical preferences when making capital structure decisions. For this study, we included the mentioned variables as the control variables. For simplicity, we tabulated the past empirical findings as in Table 1:

Table 1 Past selected studies

Variables	**Signs by theories**	**Selected past studies**	
		Target Capital Structure	**Speed of Adjustment**
Firm size (SIZE)	+ (TOT)	Frank & Goyal (2009a), Matemilola et al. (2017), Nejad & Wasiuzzaman (2015), Ting (2016) Haron, Ibrahim, Nor, & Ibrahim, (2013), Buvanendra et al. (2018)	Liao et al. (2015), Buvanendra et al. (2018)
	– (POT)	S. Mukherjee & Mahakud (2010)	Haron et al. (2013), S. Mukherjee & Mahakud (2010), Mahakud & Mukherjee (2011)
Profitability (PROF)	+ (TOT)	Matemilola et al. (2017), Ting (2016)	Buvanendra et al. (2018)
	– (POT)	Frank & Goyal (2009a), Liao et al. (2015), S. Mukherjee & Mahakud (2010), Buvanendra et al. (2018)	Haron et al. (2013) Mahakud & Mukherjee (2011)
Asset Tangibility (TANG)	+ (TOT)	Frank & Goyal (2009a), Matemilola et al. (2017), Ting, (2016)	Buvanendra et al. (2018), Mahakud & Mukherjee, (2011)
	– (POT)	S. Mukherjee & Mahakud (2010)	
Non-debt Tax Shield (NDTS)	+	Buvanendra et al. (2018)	
	– (TOT)	Matemilola et al. (2017)	Buvanendra et al., (2018), Mahakud & Mukherjee (2011)
Firms' Growth (Growth)	+ (POT)	Ting (2016)	S. Mukherjee & Mahakud (2010)
	– (TOT)	Frank & Goyal (2009a), Matemilola et al. (2017), Nejad & Wasiuzzaman (2015), S. Mukherjee & Mahakud (2010)	Mahakud & Mukherjee, (2011)

METHODOLOGY

Data Source

Our sample was based on top 100 largest firms in Malaysia from period of 2007 to 2017. We collected all firm specifics and leverage ratio data from Thomson One Banker while the CEOs age was collected through the firms' annual reports that were obtained from the Bursa Malaysia. For a balanced panel, we supplemented the missing data from the firms' annual report. This is to reduce the potential estimation bias as a result from endogenous variables (Nguyen, 2015). In our study, we excluded the financial, insurance, and unit trust companies because these firms have different minimum capital requirement than the non-financial firms.

Proxy of Variables

Following Etudaiye-Muhtar and Ahmad (2015), we apply the book value total debt for the main estimation and the long-term debt as then second dependent variable to test for the robustness of the estimation. Our study choose the book value over market value because it better reflects the management target leverage ratios (Thies & Klock, 1992; Drobetz & Wanzenried, 2006) and more accurate to estimate the SOA (Yin & Ritter, 2018).

The proxy of CEOs talent and ability in our study is the CEOs age that is measured by the age of executive adjusted by year. We argue the increment in age will also increase the managerial efficiency because older CEOs have gained knowledge, experience, and networking from the academics that they attended, working experience and real life experience (Bertrand & Schoar, 2003; Graham et al., 2013; Kayhan, 2008; Kuo et al., 2015; Sitthipongpanich & Polsiri, 2015).

For the control variable, we employ a set of firm characteristic that are adopted from Buvanendra et al. (2018). It includes firm size, tangibility, profitability, non-debt tax shield and firm growth. All these variables measurement are tabulated in Table 2:

Table 2 Definition of variables

Variables	Definition
Book Value of Total Debt (TD)	The ratio of book value of total debt to book value total assets.
Book Value of Long-term Debt (LTD)	The ratio of book value of long-term debt to book value total assets.
CEO Age (CEOAGE)	The age of executive adjusted by year
Firm Size (SIZE)	Natural logarithm of total sales.
Tangibility (TANG)	The ratio of tangible fixed assets to total assets.
Profitability (PROF)	The ratio of earnings before interest and taxes to total assets.
Non-debt tax shield (NDTS)	The ratio of depreciation to total assets.
Growth (GROWTH)	The ratio of market to book value.

Econometric Models and Techniques

In the investigation, we use the dynamic capital structure model that is adopted from Flannery & Rangan (2006) to test the H1 and H2a. Following Buvanendra et al. (2018), we assume that OL is attributed by the firm characteristics. We then added the CEOs age as another potential variable. All the variables are represented by X. The OL is written as Equation 1:

$$LEV_{it}^{*} = \sum_{j=1}^{L} \beta_j X_{jit} + \mu_{it} \quad (1)$$

In a frictionless market, the target leverage is equal to the actual leverage, $LEV_{it} = LEV_{it}^{*}$. This situation may not be held true in the real world where the instantaneous adjustment of the actual to the target leverage may not happen with the present of recapitalisation costs (Fischer et al., 1989). As such, $LEV_{it} - LEV_{it-1} \neq LEV_{it}^{*} - LEV_{it-1}$. The deviation is represented by γ. It is written as follows:

$$LEV_{it} - LEV_{it-1} = \gamma_{it}(LEV_{it}^{*} - LEV_{it-1}) \quad (2)$$

Where LEV_{it} and LEV_{it-1} are the leverage for firm i in periods t and t-1, γ_{it} indicates the SOA towards the target leverage. The value of γ is based on the restriction $|\gamma| < 1$, which is a condition that LEV_{it-1} tends to LEV_{it}^{*} as t → ∞ (Haron et al., 2013; Mukherjee & Mahakud, 2010). The value is equal to 1 if the adjustment is complete which indicates closed deviation within one period. The value is less than 1 if the adjustment is below than the target leverage at time t, and vice versa (Haron et al., 2013).

By combining Equation 1 and 2, we obtain the reduced form of the partial adjustment model:

$$LEV_{it} = LEV_{it-1} + \gamma_{it}(LEV_{it}^{*} - LEV_{it-1}) \quad (3)$$
$$LEV_{it} = LEV_{it-1} + \gamma_{it}LEV_{it}^{*} - \gamma_{it}LEV_{it-1} \quad (4)$$
$$LEV_{it} = (1-\gamma)LEV_{it-1} + \gamma_{it}LEV_{it}^{*} \quad (5)$$
$$LEV_{it} = (1-\gamma)LEV_{it-1} + \gamma_{it}\left(\textstyle\sum_{j=1}^{L}\beta_j X_{jit} + \mu_{it}\right) \quad (6)$$
$$LEV_{it} = (1-\gamma)LEV_{it-1} + \textstyle\sum_{j=1}^{L}\gamma_{it}\beta_j X_{jit} + \gamma_{it}\mu_{it} \quad (7)$$

Rewrite the Equation 7, we derive the following equation:

$$LEV_{it}^{*} = \lambda_0 LEV_{it-1} + \textstyle\sum_{j=1}^{L}\lambda_j X_{jit} + \omega_{it} \quad (8)$$

Where $\lambda_0 = 1 - \gamma_{it}$; $\lambda_j = \gamma_{it}\beta_j$ and $\omega_{it} = \gamma_{it}\mu_{it}$.

In this study, Equation 8 is used to test the hypotheses 1 and 2a.
After estimating the dynamic capital structure, we develop the speed of adjustment model to test the hypothesis 2b. The speed of adjustment determinant is labelled with Z_{it} that represents the CEOs age and control variables. Mathematically, it is written as follows:

$$\gamma_{it} = \alpha_0 + \alpha_j Z_{it} \quad (9)$$

Rewriting the dynamic model in Equation 3, treating the target leverage, LEV_{it}^{*}, as linearly dependent from the capital structure determinants specified in Equation 2, and substituting the linear specification of adjustment speed, γ_{it}, from Equation 9, this study obtains the following equation for leverage ratio at time t:

$$\begin{aligned} LEV_{it} &= \gamma_{it}LEV_{it}^{*} + (1-\gamma_{it})LEV_{it-1} + \mu_{it} \\ &= (1-\alpha_0-\alpha_j Z_{it})LEV_{it-1} + (\alpha_0+\alpha_j Z_{it})\left(\textstyle\sum_{j=1}^{L}\beta_j X_{jit}\right) + \mu_{it} \quad (10)\end{aligned}$$

Where μ_{it} is the error term. Multiplying Equation 10 gives out Equation 11, a speed of adjustment model used to investigate the determinants of speed of adjustment towards the target leverage.

$$LEV_{it} = (1-\alpha_0)LEV_{it-1} - \alpha_j Z_{it}LEV_{it-1} + \alpha_0\textstyle\sum_{j=1}^{L}\beta_j X_{jit} + \alpha_j\sum_{j=1}^{L}\beta_j Z_{it}X_{jit} + \mu_{it} \quad (11)$$

FINDINGS AND DISCUSSIONS

Table 3 Descriptive statistics

Variables	Obs	Min	Max	Mean	Median	S.D.
TD	1100	0.0000	0.7722	0.2234	0.2095	0.1734
LTD	1100	0.0000	0.7094	0.1306	0.0835	0.1421
SIZE	1100	8.1371	16.5605	12.8318	12.8393	1.5215
TANG	1100	0.0006	0.9208	0.3626	0.3426	0.2020
PROF	1100	−0.4143	1.0542	0.1104	0.0943	0.1165
NDTS	1100	0.0001	0.2883	0.0284	0.0241	0.0250
GROWTH	1100	0.1800	157.3900	3.1639	1.6400	7.7937
CEOAGE	1100	31.0000	86.0000	55.1955	55.0000	8.7100

Table 4 Correlation results

	TD	LTD	SIZE	TANG	PROF	NDTS	GROWTH	CEOAGE	VIF
TD	1								
LTD	0.7896[a]	1							
SIZE	0.3410[a]	0.3261[a]	1						1.05
TANG	0.0039	0.0199	0.1487[a]	1					1.44
PROF	−0.1891[a]	−0.1481[a]	0.0322	−0.0387	1				1.48
NDTS	−0.1936[a]	−0.1472[a]	0.0329	0.4909[a]	0.2014[a]	1			1.71
GROWTH	0.0183	0.0262	0.1010[a]	0.0237	0.5666[a]	0.4191[a]	1		1.81
CEOAGE	−0.0154	−0.0154	0.0155	−0.120	−0.1174[a]	−0.1043[a]	−0.1411[a]	1	1.03
								Mean VIF	1.42

Note: $^{a}p < .01$, $^{b}p < .05$

Table 3 shows the descriptive statistics whereas Table 4 demonstrates the correlation results. Any correlation results lesser than 0.60 and variance inflating factor (VIF) value less than 10 (1.42) indicate lower risk multicollinearity problem of all the variables. In this study, we are not interpreting the control variables due to the limited length of the journal.

Table 5 Dynamic capital structure model results

Results: The relationship between lagged leverage, CEO age and target leverage		
Dependent Variable	**TD (Main result)**	**LTD (Robustness result)**
SOA	0.3393	0.4530
TD_{t-1}	0.6607	0.5470[a] (11.04)
Half-life[ln(0.5)/ln (γ)]	1.67	1.15
CEOAGE	−0.0016[a] (−4.33)	−0.0026[a] (−2.64)
SIZE	0.0560[a] (6.49)	0.0108 (1.07)
TANG	0.1072[a] (4.84)	0.0496 (0.87)
PROF	−0.4244[a] (−12.89)	−0.4274[a] −4.49)
NDTS	−1.3223[a] (−5.45)	−1.1078[a] (−2.83)
GROWTH	0.0022[a] (7.01)	0.0015 (1.91)
AR(1) *p*-value	0.0000	0.0000
AR(2) *p*-value	0.0839	0.0824
Sargan Test *p*-value	0.6211	0.1851
Wald Test *p*-value	0.0000	0.0000
Instruments	70	54

Note: Figures in the brackets are *t*-statistics. $^{a}p < .01$, $^{b}p < .05$

The regression results (main result) show 0.6607 adjustment costs for Malaysia, which implies the SOA towards the target TD is 33.93% for Malaysia firms (see Table 5). For Malaysia to adjust to half of the target leverage, the firms need 1.67 years for adjustment purpose. As for robustness check, we find that adjustment cost is 0.5470 that implies the SOA towards target LTD is 45.30% (see Table 5). Reaching half of the target LTD will take 1.15 years for the Malaysia firms to adjust. As to make the interpretation interesting, the results are compared with previous empirical studies from Malaysia and other two emerging countries (i.e China and Indonesia). Compared to studies in Malaysia by Haron (2014b), Nejad & Wasiuzzaman (2015), and Matemilola et al. (2017), the SOA in our study is slower than those reported in their study at 67.97%, 40% and 62.6%, respectively. Still, it is relatively quicker than 26% by Ting (2016). The difference is caused by the different set of variables as the attributes for the target leverage and we all have investigated the SOA with different time period. Compared to China and Indonesia setting, our result is slower than the SOA reported by Yang et al. (2015) at 36.6%, and Soekarno, Kitri, and Utomo (2016) at 45.65%. The plausible reasons are due to different institutional settings in these countries than Malaysia. In addition, most of the firms in China and Indonesia are State-Owned Enterprises. From the obtained results, we conjecture that Malaysia firms are under-adjusted and continuously adjust towards the target leverage, in which supported by the dynamic capital structure. Hence, we accept H1.

Table 6 Speed of adjustment model results

Result: The relationship between CEO age and SOA towards target leverage		
Dependent Variable	**SOA towards target TD (main result)**	**SOA towards target LTD (robustness result)**
TD_{t-1} X CEOAGE	0.0035[b] (2.05)	0.0060[b] (1.97)
TD_{t-1} X SIZE	0.0787[a] (3.26)	0.0532[a] (2.78)
TD_{t-1} X TANG	0.5684[a] (3.76)	0.0516 (0.29)
TD_{t-1} X PROF	−0.0375 (−0.18)	1.1493[a] (5.46)
TD_{t-1} X NDTS	−1.9761 (−1.41)	−4.3630[b] (−2.29)
TD_{t-1} X GROWTH	0.0003 (0.13)	0.0132[a] (5.60)
AR(1) *p*-value	0.0000	0.0000
AR(2) *p*-value	0.1490	0.7366
Sargan Test *p*-value	0.2793	0.2545
Wald Test *p*-value	0.0000	0.0000
Instruments	94	70

Note: Figures in the brackets are t-statistics. $^{a}p < .01$, $^{b}p < .05$

Next, we find a negative relationship between CEOs age and the target leverage (main result). This signifies decreasing the target leverage as CEOs age increases. For robustness, the result in Table 6 also exhibits similar negative relationship. We are 99% confident the likelihood for an inverse relationship between CEOs age and target leverage in the population. The result has been validated by the Wald-test (p-value <0.05), Sargan test (p-value <0.05) and AR(2) test (p-value >0.05). The plausible reason for such relationship is the short career horizon among older CEO as they have a few years left to work with the firms before retirement. Thus, they are only interested to make decisions that suit their risk-averse perception on the risk related strategies. The risk-aversion is to enable them to grasp the return within the remaining years since high risk strategy often takes longer time to realise the returns. Alternatively, debt in Malaysia is unable to enact disciplinary effect among the older CEOs to reduce their entrenchment behaviour and serve the shareholder interest. The result suggests that CEOs exhibit inhibitory deficit behaviour as they grow older. Our result is supported by the UET that their demographic characteristics affect the firm decisions and risk aversion behaviour leads to below performance. The result is consistent with some previous studies such as Bertrand and Schoar (2003), Serfling (2014), Ting et al. (2015), and Farag and Mallin (2018), who found lower tendency among older CEOs to take risk related firm financial decisions. Nevertheless, this study finding is incompatible with Huang et al. (2012) who find older CEOs are more ethical in reporting quality financial statement that implies their ability to decrease the financial cost and improve firms value. As such, we suggest CEOs age is a potential determinant of target leverage; hence support our first proclamation on the risk aversion behaviour of older CEOs. As results, our study accepts the H2a.

As for the impact of CEOs age on the SOA, our main results show an inverse relationship[1] between both attributes (See Table 6) and the robustness result also indicates similar sign. We are 95% confident the likelihood for an inverse relationship between CEOs age and SOA towards the target leverage in the population. The result has been validated by the three specification tests. The plausible justification is the excessively risk-averse and entrenched behaviour (Brisker & Wang, 2017) of older CEOs to manage the adjustment towards the target leverage because they perceive the adjustment process as too costly. The older CEOs also think they could only gain small potential benefits from adjusting towards the target leverage since the use of debt increases the bankruptcy risk and constraints the potential personal benefits before their retirement. Our result suggests the declining ability as well as higher agency conflict of older CEOs in managing the adjustment towards target leverage. Our result is supported by the UET that older CEOs are risk-averse. This result is in line with Barker and Mueller (2002), Bertrand and Schoar (2003), Serfling (2014), Farag and Mallin (2018) and Nguyen et al. (2018) that exhibited risk-averse behaviour of older CEOs in making firm decisions. Nevertheless, this finding is inconsistent with Frank and Goyal (2009b) who find insignificant relationship between CEO age and speed of adjustment for the US firms. This could be due to different institutional setting of Malaysia and the USA. Since our result is negative and significant, we accept the H2b and suggest CEOs age as a potential determinant for SOA.

[1] Note: Positive coefficients in speed of adjustment model indicate a negative relationship whereas negative coefficients in the speed of adjustment model indicate a positive relationship.

CONCLUSION

Previous studies have mostly assumed the capital structure decisions as reflecting the managerial efficiency. Our study takes the initiative to examine the direct relationship of CEOs fixed effect and capital structure. We find that CEOs age defines both the optimal leverage and the speed of adjustment decision. Holding the firms' size and growth constant, older CEOs aim at personal benefits and conservatively influence the firms' leverage and speed of adjustment towards the target leverage. Our study shows that CEOs fixed effect is a determinant of firms capital structure decisions from the integration of Upper Echelons Theory and Dynamic Trade-off Theory.

Our findings have served several implications to the studies on finance. First, our study has filled the inadequacy of the managerial fixed effect that are identified in Kumar, Colombage, & Rao (2017) meta-analysis study. We have added to literature on the direct relationship of CEO fixed effect on the firm dynamic capital structure that is often assumed as efficient to reflect the capital structure decisions (Matemilola et al., 2017). We suggest the importance to include CEOs age as the determinant of capital structure in explaining the various decisions of capital structure that are often side-lined in capital structure studies. Second, our study has identified the futility of older CEOs to maximise the benefits of an interest tax shield of debt. However, they do not tend to honour the shareholder interest by reducing the potential bankruptcy risk and avoiding the disciplinary effect of debt. Third, policy makers shall create a mandatory retirement age in hiring policy for CEOs as increase in age reduces their ability. Firms may also impose several disciplinary mechanisms to reduce the possibility of entrenchment by the older CEOs.

This study has a few limitations. The use of CEOs age linked to CEOs talent and ability may be subjective as other demographic characteristics may be more representative as the talent measurement such as the CEOs experience. Furthermore, our study has a small sample size to provide an accurate of generalizability to the whole population. Future study may build upon these limitations to offer fruitful empirical findings regarding this topic.

REFERENCES

Ahmad, R., & Etudaiye-Muhtar, O. F. (2017). Dynamic model of optimal capital structure: evidence from Nigerian listed firms. *Global Business Review*, *18* (3), 1 – 15. https://doi.org/10.1177/0972150917692068

Amjed, S., & Shah, S. M. A. (2016). The impact of volatile economic conditions on corporate capital structure adjustment towards dynamic target in Pakistan. *Pakistan Journal of Commerce and Social Sciences*, *10* (2), 296 – 315.

Antonczyk, R. C., & Salzmann, A. J. (2014). Overconfidence and optimism: The effect of national culture on capital structure. *Research in International Business and Finance*, *31*, 132 – 151. DOI: https://doi.org/10.1016/j.ribaf.2013.06.005

Banerjee, S., Heshmati, A., & Wihlborg, C. (2004). The dynamics of capital structure. *Research in Banking and Finance*, *4*, 275 – 297. DOI: https://doi.org/10.1007/s10644-004-1056-2

Barker, V. L., & Mueller, G. C. (2002). CEO characteristics and firm R&D spending. *Management Science*, *48* (6), 782 – 801. DOI: https://doi.org/10.1287/mnsc.48.6.782.187

Barno, L. J. (2017). Impact of managers' characteristics on capital structure among firms listed in Nairobi Securities Exchange, Kenya. *International Journal of Economics, Commerce and Management*, *5* (7), 487 – 503. Retrieved from http://ijecm.co.uk/wp-content/uploads/2017/07/5734.pdf.

Bertrand, M., & Schoar, A. (2003). Managing with style: The effect of managers on firm policies. *The Quarterly Journal of Economics*, *118* (4), 1169 – 1208. DOI: https://doi.org/10.1162/003355303322552775

Bialowas, P., & Sitthipongpanich, T. (2014). CEO characteristics and firm value. *NIDA Development Journal*, *54* (4), 57 – 90. DOI: https://doi.org/10.14456/ndj.2014.3

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, *87* (1), 115 – 143. DOI: https://doi.org/10.1016/S0304-4076(98)00009-8

Brisker, E. R., & Wang, W. (2017). CEO' s inside debt and dynamics of capital structure. *Financial Management*, (XXXX), 1 – 31. DOI: https://doi.org/10.2139/ssrn.2718498

Buvanendra, S., Sridharan, P., & Thiyagarajan, S. (2018). Determinants of speed of adjustment (SOA) toward optimum capital structure: Evidence from listed firms in Sri Lanka. *Journal of Asia-Pacific Business*, *19* (2), 46 – 71. DOI: https://doi.org/10.1080/10599231.2018.1453742

Chen, Y., Zhang, X., & Liu, Z. (2014). Manager characteristics and the choice of firm "low leverage": Evidence from China. *American Journal of Industrial and Business Management*, *4* (October), 573 – 584.

Cheung, K. T. S., Naidu, D., Navissi, F., & Ranjeeni, K. (2017). Valuing talent: Do CEOs' ability and discretion unambiguously increase firm performance. *Journal of Corporate Finance*, *42*, 15 – 35. DOI: https://doi.org/10.1016/j.jcorpfin.2016.11.006

Cline, B. N., & Yore, A. S. (2016). Silverback CEOs: Age, experience, and firm value. *Journal of Empirical Finance*, *35* (January), 169 – 188. DOI: https://doi.org/10.1016/j.jempfin.2015.11.002

Cook, D. O., & Tang, T. (2010). Macroeconomic conditions and capital structure adjustment speed. *Journal of Corporate Finance*, *16* (1), 73 – 87. DOI: https://doi.org/10.1016/j.jcorpfin.2009.02.003

Drobetz, W., Schilling, D. C., & Schroder, H. (2015). Heterogeneity in the speed of capital structure adjustment across countries and over the business cycle. *European Financial Management*, *21* (5), 936 – 973. DOI: https://doi.org/10.1111/eufm.12048

Drobetz, W., & Wanzenried, G. (2006). What determines the speed of adjustment to the target capital structure? *Applied Financial Economics*, *16* (13), 941 – 958. DOI: https://doi.org/10.1080/09603100500426358

Etudaiye-Muhtar, O. F., & Ahmad, R. (2015). Empirical evidence of target leverage, adjustment costs and adjustment speed of non-financial firms in selected African countries. *International Journal of Economics and Financial Issues*, *5* (2), 482 – 488. Retrieved from https://ideas.repec.org/a/eco/journ1/2015-02-20.html

Farag, H., & Mallin, C. (2018). The influence of CEO demographic characteristics on corporate risk-taking: Evidence from Chinese IPOs. *The European Journal of Finance*, *24* (16), 1528 – 1551. DOI: https://doi.org/10.1080/1351847X.2016.1151454

Fischer, E. O., Heinkel, R., & Zechner, J. (1989). Dynamic capital structure choice: Theory and tests. *Journal of Finance*, *44* (1), 19 – 40. DOI: https://doi.org/10.2307/2328273

Flannery, M. J., & Hankins, K. W. (2013). Estimating dynamic panel models in corporate finance. *Journal of Corporate Finance*, *19* (1), 1 – 19. DOI: https://doi.org/10.1016/j.jcorpfin.2012.09.004

Flannery, M. J., & Rangan, K. P. (2006). Partial adjustment toward target capital structures. *Journal of Financial Economics*, *79*, 469 – 506. DOI: https://doi.org/10.1016/j.jfineco.2005.03.004

Frank, M. Z., & Goyal, V. K. (2009a). Capital structure decisions: Which factors are reliably important ? *Financial Management*, 1 – 37. DOI: https://doi.org/https://doi.org/10.1111/j.1755-053X.2009.01026.x

Frank, M. Z., & Goyal, V. K. (2009b). Corporate leverage: How much do managers really matter? *Unpublished Working Paper*. DOI: https://doi.org/10.2139/ssrn.971082

Getzmann, A., Lang, S., & Spremann, K. (2015). Target capital structure determinants and speed of adjustment analysis to address the Keynes-Hayek debate. *Journal of Reviews on Global Economics*, *4*, 225 – 241. DOI: https://doi.org/10.6000/1929-7092.2015.04.23

Globerman, S., Peng, M. W., & Shapiro, D. M. (2011). Corporate governance and Asian companies. *Asia Pacific Journal of Management*, *28* (1), 1 – 14. DOI: https://doi.org/10.1007/s10490-010-9240-6

Graham, J. R., & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, *60* (2 – 3), 187 – 243. DOI: https://doi.org/10.1016/S0304-405X(01)00044-7

Graham, J. R., Harvey, C. R., & Puri, M. (2013). Managerial attitudes and corporate actions. *Journal of Financial Economics*, *109*, 103 – 121. DOI: https://doi.org/10.1016/j.jfineco.2013.01.010

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *The Academy of Management Review*, *9* (2), 193 – 206.

Haron, R. (2014a). Capital structure inconclusiveness: Evidence from Malaysia, Thailand and Singapore. *International Journal of Managerial Finance*, *10* (1), 23 – 38. DOI: https://doi.org/10.1108/IJMF-03-2012-0025

Haron, R. (2014b). Firms' speed of adjustment and rational financing behaviour: Malaysian evidence. *J. for Global Business Advancement*, *7* (2), 151. DOI: https://doi.org/10.1504/JGBA.2014.063869

Haron, R., Ibrahim, K., Nor, F. M., & Ibrahim, I. (2013). Factors affecting speed of adjustment to target leverage: Malaysia evidence. *Global Business Review*, *14* (2), 243 – 262. DOI: https://doi.org/10.1177/0972150913477469

Huang, H. W., Rose-Green, E., & Lee, C. C. (2012). CEO age and financial reporting quality. *Accounting Horizons*, *26* (4), 725 – 740. DOI: https://doi.org/10.2308/acch-50268

Kane, A., Marcus, A. J., & McDonald, R. L. (1984). How Big is the Tax Advantage to Debt? *The Journal of Finance*, *39*(3), 841–853. https://doi.org/10.1111/j.1540-6261.1984.tb03678.x

Kayhan, A. (2008). Managerial discretion and the capital structure dynamics. *SSRN Electronic Journal*. DOI: https://doi.org/DOI: 10.2139/ssrn.1102880

Kumar, S., Colombage, S., & Rao, P. (2017). Research on capital structure determinants: A review and future directions. *International Journal of Managerial Finance*, *13* (2), 106 – 132. DOI: https://doi.org/10.1108/IJMF-09-2014-0135

Kuo, H. C., Wang, L. H., & Lin, D. (2015). CEO traits, corporate performance, and financial leverage. *International Journal of Economics and Finance*, *7* (1), 68 – 86. DOI: https://doi.org/10.5539/ijef.v7n1p68

Lemmon, M., Roberts, M., & Zender, J. (2008). Back to the beginning: Persistence and the cross section of corporate capital structure. *The Journal of Finance*, *63* (4), 1575 – 1608. DOI: https://doi.org/10.1111/j.1540-6261.2008.01369.x

Li, T., Munir, Q., & Abd Karim, M. R. (2017). Nonlinear relationship between CEO power and capital structure: Evidence from China's listed SMEs. *International Review of Economics and Finance*, *47*, 1 – 21. DOI: https://doi.org/10.1016/j.iref.2016.09.005

Liao, L.-K., Mukherjee, T., & Wang, W. (2015). Corporate governance and capital structure dynamics: An empirical study. *Journal of Financial Research*, *38* (2), 169 – 191. DOI: https://doi.org/10.1111/j.1540-6261.2012.01735.x

Lin, C., Hu, M., & Li, T. (2018). Managerial ability and the speed of leverage adjustment. *9th Conference on Financial Markets and Corporate Governance (FMCG) 2018*, (January), 1 – 61. DOI: https://doi.org/10.2139/ssrn.3105050

Lööf, H. (2004). Dynamic optimal capital structure and technical change. *Structural Change and Economic Dynamics*, *15* (4), 449 – 468. DOI: https://doi.org/10.1016/j.strueco.2003.05.001

M'ng, J. C. P., Rahman, M., & Sannacy, S. (2017). The determinants of capital structure: Evidence from public listed companies in Malaysia, Singapore and Thailand. *Cogent Economics & Finance*, *5* (1), 1 – 34. DOI: https://doi.org/10.1080/23322039.2017.1418609

Mahakud, J., & Mukherjee, S. (2011). Determinants of adjustment speed to target capital structure: Evidence from Indian manufacturing firms. *International Conference on Economics and Finance Research*, *4*, 67 – 71. Retrieved from http://www.ipedr.com/vol4/13-F00030.pdf

Malmendier, U., Tate, G., & Yan, J. (2011). Overconfidence and early-life experiences: The effect of managerial traits on corporate financial policies. *The Journal of Finance*, *LXVI*(5).

Matemilola, B. T., Bany-Ariffin, A. N., Azman-Saini, W. N. W., & Nassir, A. M. (2017). Does top managers' experience affect firms' capital structure? *Research in International Business and Finance*, (October), 0 – 1. DOI: https://doi.org/10.1016/j.ribaf.2017.07.184

Mishra, D. R. (2014). The dark side of CEO ability: CEO general managerial skills and cost of equity capital. *Journal of Corporate Finance*, *29*, 390 – 409. DOI: https://doi.org/10.1016/j.jcorpfin.2014.10.003

Morellec, E., Nikolov, B., & Schurhoff, N. (2012). Corporate governance and capital structure dynamics. *Journal of Finance*, *67* (3), 803 – 848. DOI: https://doi.org/10.1111/j.1540-6261.2012.01735.x

Muhiudeen, S. (2017, March 25). When directors choose their own rules. *The Star Online*. Retrieved from https://www.thestar.com.my/business/business-news/2017/03/25/when-directors-choose-their-own-rules/

Mukherjee, S., & Mahakud, J. (2010). Dynamic adjustment towards target capital structure: Evidence from Indian companies. *Journal of Advances in Management Research*, *7* (2), 250 – 266. DOI: https://doi.org/10.1108/09727981011085020

Mukherjee, T., & Wang, W. (2013). Capital structure deviation and speed of adjustment. *The Financial Review*, *48* (4), 597 – 615. DOI: https://doi.org/10.1111/fire.12017

Nejad, N. R., & Wasiuzzaman, S. (2013). The empirical analysis of capital structure determinants – Evidence from Malaysia. *World Ascademy of Science, Engineering and Technology*, *74*, 466 – 474.

Nejad, N. R., & Wasiuzzaman, S. (2015). Multilevel determinants of capital structure: Evidence from Malaysia. *Global Business Review*, *16* (2), 199 – 212. DOI: https://doi.org/10.1177/0972150914564274

Nguyen, P., Rahman, N., & Zhao, R. (2018). CEO characteristics and firm valuation: A quantile regression analysis. *Journal of Management & Governance*, *22* (1), 133 – 151. DOI: https://doi.org/10.1007/s10997-017-9383-7

Nguyen, T., Locke, S., & Reddy, K. (2015). Ownership concentration and corporate performance from a dynamic perspective: Does national governance quality matter? *International Review of Financial Analysis*, *41*, 148 – 161. DOI: https://doi.org/10.1016/j.irfa.2015.06.005

Nguyen, T. van. (2015). *Corporate governance structures and financial performance: A comparative study of publicly listed companies in Singapore and Vietnam* (Doctoral dissertation). The University of Waikato.

Nor, F. M., Haron, R., Ibrahim, K., Ibrahim, I., & Alias, N. (2011). Determinants of target capital structure: Evidence on South East Asia countries. *Journal of Business and Policy Research*, *6* (3), 39 – 61. Retrieved from http://irep.iium.edu.my/id/eprint/10181

Peni, E. (2014). CEO and chairperson characteristics and firm performance. *Journal of Management and Governance*, *18* (1), 185 – 205. DOI: https://doi.org/10.1007/s10997-012-9224-7

Serfling, M. A. (2014). CEO age and the riskiness of corporate policies. *Journal of Corporate Finance*, *25*, 251 – 273. DOI: https://doi.org/10.1016/j.jcorpfin.2013.12.013

Sitthipongpanich, T., & Polsiri, P. (2012). CEO characteristics and corporate financing in Thailand. *International Research Journal of Finance and Economics*, *102*, 52 – 69.

Sitthipongpanich, T., & Polsiri, P. (2015). Do CEO and board characteristics matter? A study of Thai family firms. *Journal of Family Business Strategy*, *6* (2), 119 – 129. DOI: https://doi.org/10.1016/j.jfbs.2015.01.002

Soekarno, S., Kitri, M. L., & Utomo, S. (2015). The speed of adjustment to capital structure target before and after financial crisis: Evidence from Indonesian state owned enterprises. *International Journal of Applied Business and Economic Research*, *13* (7), 5375 – 5387. DOI: https://doi.org/10.1504/IJMEF.2016.080081

Soekarno, S., Kitri, M. L., & Utomo, S. (2016). Capital structure determinants and the speed of adjustment towards capital structure target: Evidence from Indonesian state-owned enterprises. *International Journal of Monetary Economics and Finance*, *9* (4), 388 – 400. DOI: https://doi.org/10.1504/IJMEF.2016.080081

Thies, C., & Klock, M. (1992). Determinants of capital structure. *Review of Financial Economics*, *1* (2), 40 – 52. DOI: https://doi.org/10.1002/j.1873-5924.1992.tb00548.x

Thijssen, M. (2017). *CEO characteristics and capital structure of firms* (Master's Thesis). University of Twente.

Ting, I. W. K. (2016). Estimating dynamic panel model of leverage decision: Evidence from Malaysia. *Procedia Economics and Finance*, *35* (October 2015), 267 – 273. DOI: https://doi.org/10.1016/S2212-5671(16)00033-2

Ting, I. W. K., Azizan, N. A. B., & Kweh, Q. L. (2016). Managerial overconfidence and leverage decision: The moderating effect of human governance in Malaysia. *Journal for Global Business Advancement*, *9* (1), 38 – 51. DOI: https://doi.org/10.1504/JGBA.2016.074894

Ting, I. W. K., Azizan, N. A., & Kweh, Q. L. (2015). Upper echelon theory revisited: The relationship between CEO personal characteristics and financial leverage decision. *Procedia - Social and Behavioral Sciences*, *195*, 686 – 694. DOI: https://doi.org/10.1016/j.sbspro.2015.06.276

Wang, G., Holmes, R. M., Oh, I.-S., & Zhu, W. (2016). Do CEOs matter to firm strategic actions and firm performance? A meta-analytic investigation based on upper echelons theory. *Personnel Psychology*, *69* (4), 775 – 862. DOI: https://doi.org/10.1111/peps.12140

Yang, Y., Albaity, M., & Hassan, C. H. (2015). Dynamic capital structure in China: Determinants and adjustment speed. *Investment Management and Financial Innovations*, *12* (2), 195 – 204.

Yin, Q. E., & Ritter, J. R. (2018). The speed of adjustment to the target market value leverage is slower than you think. *SSRN*. DOI: https://doi.org/10.2139/ssrn.2839366

Zhou, W., & Wang, Y. (2014). An empirical study for corporate risk index: CEO characteristics affecting corporate risk-taking. *Journal of Applied Sciences*, *14* (24), 3520 – 3525. DOI: https://doi.org/10.3923/jas.2014.3520.3525