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# DETERMINANTS OF ACCOUNTING-BASED PERFORMANCE: EVIDENCE FROM BURSA MALAYSIA

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**Abstract**

*This study aims to examine the determinants of the accounting-based performance of 531 non-financial Malaysian listed companies over the period 2004 to2012. The system generalized method of moments reveals that both prior risk-taking behaviour and size are found to be important determinants of performance. A significant positive influence of prior risk-taking behaviour on performance implies that risk-averse managers are cognitively influenced by their capability in handling risky investments in the past; consequently enhance confidence in their ability to manage profitable investments. The result appears to support the capital asset pricing model implication. Meanwhile, a significant positive size-performance relationship suggests that investors and fund managers should focus on larger companies as they can have better stock performance.*

***Keywords:*** *Risk-return relationship, reverse size effect, System-GMM.*

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## Introduction

Financial performance is considered as an effective indicator of a company's achievement over its fiscal year. Return on asset (ROA) is one of the most favorable accounting-based performance measures (Al-Matari, Al-Swidi, & Fadzil, 2014; Issah & Antwi, 2017), which reflects the fundamentals of business, including the effectiveness of wealth-generating activities by means of assets utilization. In view of this fact, ROA could be considered as one of the essential

components of financial performance measures which can encourage people to invest in a company. As such, corporate managers should take strategic actions to genuinely improve this accounting-based performance from time to time.

The issue on the determinants of corporate financial performance has long been discussed in the areas of financial economics (Hodoshima, Garza-Gomez, & Kunimura, 2000; Blitz & Van Vliet, 2007; Rossi & Timmerman, 2012; Vintila & Nenu, 2015) and strategic management (McNamara & Bromiley, 1999; Andersen, Denrell, & Bettis, 2007; Henkel, 2009; Li, Yang & Zhang, 2014). Identification of factors that can accurately predict firm performance is of great interest to any decision maker. Many studies (Hawawini, Subramanian, & Verdin, 2003; Issah & Antwi, 2017) argue that industry-specific (external) factors play a more important role in dictating the influence of firm performance. On the other hand, other studies (Opler & Titman, 1994; Kamasak, 2011) suggest that firm specific (internal) factors seem to be the major determinants of firm performance, and are the main drivers of competitive advantage which is crucial for the long-run survival of a company. Focusing on firm specific factors seems more appropriate for this study since prior research documented that a firm's characteristic factors had a greater effect in explaining firm performance as compared to industry effects (Hansen & Wernerfelt, 1989; Yurtoglu, 2004).

Several research papers (Chandrapala & Knápková, 2013; Kaya, 2015; Ismail & Subramaniam, 2017) developed a measurement model for firm performance based on various internal indicators. Chandrapala and Knápková (2013) investigated the impact of eight internal factors on ROA of 974 firms in the Czech Republic over the period 2005 to 2008. The study showed that firm size, sales growth and capital turnover had significant positive impacts on the financial performance of firms. Meanwhile, debt ratio and inventory reflected significant negative impacts on the financial performance of firms. Furthermore, Kaya (2015) investigated the firm-specific factors affecting the profitability of 24 non-life insurance companies operating in Turkey over the period 2006 to 2013. The main results of the study demonstrated that profitability of non-life insurance companies was statistically significant and positively related to the size of a company and the premium growth rate, whereas profitability was statistically significant and negatively related to the age of a company, loss ratio

and current ratio. A similar study was conducted by Ismail and Subramaniam (2017) on 42 consumer product companies in Malaysia for the period 2006 to2015. The results suggest that sales growth (debt to equity ratio) is positively (negatively) and significantly related to profitability.

However, despite being a highly debated topic in the literature, previous studies have not reached a conclusive inference with regard to which company-specific factors most affect the performance of a company. Inconclusive results will impinge investors' strategy to secure the best investment opportunities with maximum returns for a given level of risks. Therefore, it provides an avenue for the current research to test the previously examined factors and integrate behavioural models of decision-making, agency theory and other relevant theoretical views into the research framework. A blend of a broader set of organisational theories could give a better explanation on the risk-return relationship, which can add value to the body of knowledge on this issue in the context of emerging markets.

The Malaysian stock market is of special interest as Morgan Stanley Capital International (MSCI) views it as one of the emerging markets in the Asian region which could offer a good place for investment[1] (Lingaraja, Selvam & Vasanth, 2014). Even though comparatively an emerging market, Malaysia was claimed to be efficient during the period of 2004 to 2013 in the Asian region (Lingaraja et al., 2014), the profile of risk and return in this market may be different from those of efficient markets in developed countries. This is because emerging markets and developed markets do not have similar characteristics (Bekaert, Erb, Harvey & Viskanta, 1998; Bekaert & Harvey, 2002; Bekaert & Harvey, 2003).

This study focuses on both the lagged and contemporaneous risk-taking, size, financial slack and leverage as company-specific factors are expected to have influence on accounting-based performance. To the author's knowledge, this is the first attempt to utilize the generalized method of moments (GMM) estimator in investigating

[1] By having sound domestic macroeconomic fundamentals, ample liquidity of financial markets and good banking systems enable Malaysia to have sufficient buffers against external shocks, namely USA sub-prime financial crisis and European sovereign debt crisis (Abidin & Rasiah, 2009; Ibrahim, 2010; Samsi, Yusof & Cheong, 2012).

the determinants of corporate performance within the context of the Malaysian market. By using the system generalized method of moments (S-GMM) which is claimed to be as robust in the class of all GMM estimators, this paper could offer a better explanation of the issue discussed.

Conventionally, decision-makers are assumed to be prone to risk-averse behaviour (Jensen, 1986; Coffee, 1988; Gomez-Mejia & Wiseman, 1997). Apparently, this behaviour will lead to positive risk-return relationships (Fisher & Hall, 1969; Hurdle, 1974; Brealey & Myers, 2003). This risk preference is deemed to be compatible with the settings of an efficient market wherein assets are priced with the aim that their expected return will compensate shareholders for their expected risk. However, the empirical issue of Bowman's paradox has been widely discussed in Western countries since Bowman's (1980) seminal work denies the standard assumption of a positive risk-return relationship and risk-averse behaviour derived from the CAPM theory.

Many management scholars empirically prove risk-seeking behaviour amongst manager leads to negative risk-return relationship (Bromiley, 1991; Fiegenbaum & Thomas, 1985, 1986, 1988; Wiseman & Bromiley, 1991). This phenomenon emerges as the management team of a poorly performed company is willing to bear higher risks, and do not mind accepting lower returns as long as the company has an opportunity to get out of an unfavourable situation. The temptation to engage in risk-seeking behaviour reflects the perspective of Tversky is (1990) irrational behaviour of organisational decision-makers in making investment decisions. Behavioural finance suggests that the decision-makers' risk preference is affected by several cognitive and psychological errors (Ritter, 2003). Apparently, anomaly in risk preference contradicts the core assumption of efficient market hypothesis (EMH). The paradox in accounting-based risk-return relationship remains unexplained as Oviatt and Bauerschmidt (1991) failed to detect any significant relationship between risk and return based on three-stage least squares (3SLS) estimates. In addition, Chang and Thomas (1989) documented both positive (managers tend to pursue risky investments as they experience certain levels of higher returns) and negative relationships (managers also tend to gamble on risky investments as they experience certain levels of lower returns) or a curvilinear risk-return relationship.

The observation of inverse relationship between the size of companies and performance, which is labelled as size effect was first documented by Banz (1981) and Reinganum (1981). Based on the US market data, they suggested that excess returns would have been earned by holding stocks of small sized companies. The finding on this issue was further supported by Fama and French (1992). Amel-Zadeh (2011) validated the existence of size effect in the Germany equity market. He suggested that the impact of company size on stock returns is conditional on market situation where in the bearish (bullish) market, smaller (larger) companies outperform larger (smaller) companies.

However, evidence on the issue of size effect has not always been one-sided. For example, studies based on data from the US (Chang & Thomas, 1989; Horowitz, Loughran & Savin, 2000; Schwert, 2003; Chaibi, Alioui & Xiao, 2014), Korea (Mukherji, Dhatt, & Kim, 1997), UK (Dimson & Marsh, 1999; Dimson, Marsh & Staunton, 2002), Nigeria (Muritala, 2012), Tanzania (Kipesha, 2013), Czech Republic (Chandrapala & Knápková, 2013), Turkey (Kaya, 2015) and Malaysia (Mohd Ali, 2006) suggest that small sized companies have substantially lower returns than large sized companies. These researches show that the reversed size effect does not only happen in emerging markets but also exists in mature markets. Schwert (2003) suggests that the size effect appears to be reversed because practitioners begin to utilize investment tools which enable them to exploit the small-firm anomaly for their portfolio maximisation. Some studies have shown that large firms have a direct impact on performance due to the ability in operating business efficiently (Kumar, 2004; Bos & Kolari, 2005; Van Biesebroeck, 2005; Aljifri & Moustafa, 2007), utilizing economies of scales and dominating the market (Bain, 1954; Kumar, 2004; Serrasqueiro & Macas Nunes, 2008), experiencing more business diversification (Yang & Chen, 2009), having greater financial resources (Arora & Gambardella, 1990) and diversifying risk efficiently (Ghosh, 1998; Bossone & Lee, 2004).

The issue on financial slack-performance relationship in developed markets has been investigated from the perspective of the behavioural theory of the firm and the agency theory. The proponents of the behavioural theory of the firm and the agency theory posit contradictory hypothesis on the influence of financial slack on a firm's performance (Daniel, Lohrke, Fornaciari & Turner, 2004). From the perspective of the behavioural theory of the firm, financial slack is excess resource that can be utilized to absorb variation in the external business environment and tackle problems that may threaten the company's survival (Sharfman,

Wolf, Chase, & Tansik, 1988). In addition, financial slack resource can be used to take advantage of environmental opportunities and pursue innovative activities (Cyert & March, 1963; Sang, Hyuksoo, & Hinh, 2014). Therefore, organisational decision-makers need to be proactive in order to facilitate environmental change (Cheng & Kesner, 1997). These arguments support the positive effect of financial slack on performance of a company (Cyert & March, 1963; Pfeffer & Salancik, 1978; Marlin & Geiger, 2015). In line with this contention, many researchers argue that financial slack is necessary to ensure the long-run survival of a company (Singh, 1986; Hambrick & D'Aaveni, 1988; Lee, 2011).

In contrast, from the perspective of corporate governance issue, agency theorists typically argue that without effective monitoring of management, financial slack provides extra costs and inefficiency to the company and thus harms its performance (Jensen & Meckling, 1976; Fama, 1980; Jensen, 1986). This is because organisational decision-makers who are described as self-centred agents would have a tendency to waste the extra financial resources for the purpose of seeking their own interest at the expense of shareholders. Therefore, many scholars are in agreement that financial slack should be reduced to minimize the possibility of mismanagement which can cause performance to decline (Davis & Stout, 1992; Phan & Hill, 1995; Steensma & Corley, 2000).

A number of previous literature has shown that corporate governance mechanisms are important to be implemented in order to promote a more transparent and effective decision-making criteria for the management to act in the best interest of the shareholders (Tirole, 2001; Al-Faki, 2006). In the context of Jensen's (1986) free cash flow hypothesis, leverage is considered as one of the governance mechanisms which can reduce the opportunistic behaviour of managers in over-investing the financial resources under their control at the expense of shareholders. The proponents of the free cash flow hypothesis argue that having greater debt financing leads managers to put more efforts in managing risky projects that have greater potential for larger returns. Failure to meet debt payment will expose the company to bankruptcy problems (Altman, 1993), which in turn may cause the threat of manager replacement (Jensen, 1989). Thus, the existence of such a governance mechanism would mitigate the manager-shareholder conflict of interest which, in turn, could improve shareholders' values (Jensen, 1986; Harris & Raviv, 1991). Evidence of the free cash flow hypothesis is further supported by a

number of researchers (see for example, Campello, 2006; Berger & Bonaccorsi di Patti, 2006; Franck, Huyghebaert, & D'Espallier, 2010). The organisation of the rest of this paper is as follows. Section 2 describes how the present study is practically carried out. In Section 3, the results of the study are presented. Finally, Section 4 summarises the findings and highlights the implications of the study.

## Methods

The empirical test of this study was based on 531 non-financial Malaysian listed companies. An unbalanced panel data was collected for nine years from 2004 to 2012. This period of study was selected because the Malaysian stock market was claimed to be relatively efficient as compared to its counterparts in the Asian region during that period (Lingaraja, Selvam & Vasanth, 2014). All annual based data set for this study were extracted from Datastream. The purpose of relying on a single source of database was to ensure consistency of extracted data. The uniformity of the data was expected to result in an unbiased analysis. To answer the research objective of this study, the following model was examined.

$$PERFroa_{i,t} = \alpha_0 + \alpha_1 RISKSTDroa_{i,t-1} + \alpha_2 RISKSTDroa_{i,t} + \alpha_3 SIZE_{i,t} +$$

$$\alpha_4 FSlack_{i,t} + \alpha_5 LEV_{i,t} + \alpha_6 PERFroa_{i,t-1} + e_{i,t}$$

where, i = 1,…, *N* represents the company and t = 1,…, *T* represents time period. Dependent variable $PERFroa_{i,t}$ represents company *i*'s performance. The company-specific variables, namely $RISKSTDroa_{i,t-1}$ and $RISKSTDroa_{i,t}$ represent risk-taking[2] in year *t* -1 and *t* respectively; $SIZE_{i,t}$ refers to company *i*'s size (measured by total assets) in year *t;* $FSlack_{i,t}$ is financial slack (measured by current ratio) for company *i* in year *t*; and $LEV_{i,t}$ is company *i*'s debt-to-equity ratio in year *t*. Time dummies are included in the specification (where appropriate) and $SIZE_{i,t}$ is transformed into logarithms. It is assumed that the error terms $e_{i,t}$ in the above equation follow a one-way error component model:

$$e_{i,t} = \lambda_i + \nu_{i,t}$$

where $\lambda_i \sim iid\ (0,\sigma^2_\lambda)$ represents the specific effects and $\mathbf{v}_{it} \sim iid\ (0,\sigma^2_{\mathbf{v}})$ is the error term. They are independent of each other and among themselves.

This research applies one of the most common variations of GMM to estimate the dynamic unbalanced panel models. The method is known as system-GMM (S-GMM) estimator (Arellano & Bover, 1995; Blundell & Bond, 1998; 2000). This dynamic panel data estimation approach is an extension of the original GMM estimator from Arellano and Bond (1991), which is known as the difference-GMM (D-GMM) estimator. The basic principle of the D-GMM is to eliminate the unobserved individual-specific effects by accomplishing first-differenced equations with suitable lagged levels of the dependent and endogenous variables as instruments. However, implementing first differencing lessens the variation in all regressors which leads to weak identification problems and increases measurement errors. Therefore, the S-GMM was employed.

The S-GMM method combines moment conditions for model in first differences (the transformed equation) with moment conditions for the model in levels (the original equation). This process is done by exploiting lagged variables at levels as instrumental variables in the transformed equation whereas lagged difference variables are used as instruments in the original equation. By estimating regressions in the transformed and original equations simultaneously, the S-GMM is able to differentiate the instruments while keeping regressors in levels. Hence, this procedure allows the introduction of more instruments, further reduce the finite sample bias and substantially improves the estimation efficiency (Blundell, Bond, & Windmeijer, 2000; Windmeijer, 2005; Roodman, 2006; Baltagi, 2008). The consistency and reliability of the GMM estimator procedures were tested using two standard diagnostic tests. The over-identifying restriction was tested using the Sargan's (1964) test of misspecification, meanwhile the Arellano-Bond (1991) tests for first order serial correlation (AR(1)) and second order serial correlation (AR(2)) of the residuals were applied to verify the efficiency of model estimations using the GMM approach.

The S-GMM estimation procedure is performed in one- and two-step variants. The process starts by calculating the one-step GMM estimates. In the first step, homoskedasticity and independent residuals are assumed. Then, by utilizing the one-step residuals, a more efficient two-step GMM estimator is computed. The two-step S-GMM estimation method is credited as a more sophisticated and effective approach since this estimator uses optimal weighting matrices. Furthermore, Windmeijer (2005) proposes a two-step estimator with robust standard errors to correct finite-sample bias. The adjustment

is performed by acquiring an estimated variance covariance matrix (VCE) which is robust to heteroskedasticity. This adjustment will not change the point estimates. Only estimated VCE and standard errors are changed. By doing the correction of the standard errors of the two-step GMM estimates, this estimator is more competent in dealing with the issues of endogeneity for some of the explanatory variables and omitted variables bias. Most importantly, this method is capable of offering acceptable and consistent estimators for the above mentioned issues.

## Results

Table 1 presents the summary of the descriptive statistics for each continuous variable used in the study over the period 2004 to 2012. The number of observations depicted in Table 1 depends on the availability of the data provided by Datastream. Thus, the total number of observations for company specific characteristics is not equal to 4779 company-year observations. The findings of the descriptive analysis represent both the 388 active companies and the 143 delisted companies categorized under all non-financial sectors. This has caused a huge gap between the minimum and maximum values of all variables. The blend of both active and delisted companies is meant to create a survivorship-bias-free data set.

Table 1

*Descriptive Statistics of Continuous Variables over the Period 2004-2012*

| | Obs (N) | Mean | STD | Min | Max |
|---|---|---|---|---|---|
| $PERFroa_{i,t}$ (%) | 4109 | 3.33 | 12.36 | -99.90 | 107.70 |
| $PERFroa_{i,t-1}$ (%) | 3726 | 3.24 | 12.58 | -104.28 | 111.95 |
| $RISKSTDroa_{i,t}$ (%) | 3711 | 5.64 | 7.49 | 0.20 | 58.51 |
| $RISKSTDroa_{i,t-1}$ (%) | 3335 | 5.73 | 7.60 | 0.20 | 59.35 |
| $SIZE_{i,t}$ [3](Total Assets in RM'000) | 4134 | 1195697 | 2311269 | 1172 | 11100000 |
| $FSlack_{i,t}$ (%) | 4074 | 2.42 | 2.49 | 0.01 | 12.43 |
| $LEV_{i,t}$ | 4128 | 0.67 | 1.79 | -11.41 | 12.91 |

The results of pairwise Pearson's correlation for the research model are depicted in Table 2. Generally, almost no multicollinearity

problem arises between the independent variables in the predictive model. This is because the pairwise Pearson's correlation indicators for almost all independent variables are less than 0.8. Table 2 shows that only $RISKSTDroa_{i,t}$ has a pairwise Pearson's correlation that exceeds 0.8. Therefore, to ensure there is no multicollinearity problem amongst the paired variables, the variance inflation factor (VIF) is applied. Hair et al. (2010) suggested that a VIF of less than 10 would indicate that no serious multicollinearity problem exists. The results in Table 3 confirm that there is no threat of multicollinearity as all variables presents VIF below 10.

Table 2

*Pearson Correlation Tests between Independent Variables of Study*

| Independent variables | $RISKSTDroa_{i,t-1}$ | $RISKSTDroa_{i,t}$ | $SIZE_{i,t}$ | $FSlack_{i,t}$ | $LEV_{i,t}$ | $PERFroa_{i,t-1}$ |
|---|---|---|---|---|---|---|
| $RISKSTDroa_{i,t-1}$ | 1.00 | | | | | |
| $RISKSTDroa_{i,t}$ | 0.87** | 1.00 | | | | |
| $SIZE_{i,t}$ | -0.23** | -0.26** | 1.00 | | | |
| $FSlack_{i,t}$ | -0.04* | -0.05** | -0.07** | 1.00 | | |
| $LEV_{i,t}$ | -0.07** | -0.07** | 0.13** | -0.17** | 1.00 | |
| $PERFroa_{i,t-1}$ | -0.18** | -0.15** | 0.22** | 0.14** | 0.003 | 1.00 |

*Notes.* ** and * indicate the 1% and 5% significance level respectively.

Table 3

*Variance Inflation Factor (VIF) for Multicollinearity Assumption of Model*

| Independent variables | VIF |
|---|---|
| $RISKSTDroa_{i,t-1}$ | 3.97 |
| $RISKSTDroa_{i,t}$ | 3.98 |
| $SIZE_{i,t}$ | 1.09 |
| $FSlack_{i,t}$ | 1.04 |
| $LEV_{i,t}$ | 1.05 |

Since the financial econometric issue discussed in this study is dynamic by nature, the dynamic panel data analysis by using the generalized method of moments (GMM) estimator was applied. The standard diagnostic tests of dynamic System-GMM (S-GMM) estimator presented in Table 4 reveals that the research model which is found in the accounting-based data fulfills the statistical properties.

Table 4

*Diagnostic Test*

| | One-step S-GMM (1) | Two-step S-GMM (2) | Two-step S-GMM with robust SE (3) | Two-step S-GMM with time dummies and Maxldep (4) |
|---|---|---|---|---|
| $PERFroa_{i,t} = \alpha_0 + \alpha_1 RISKSTDroa_{i,t-1} + \alpha_2 RISKSTDroa_{i,t} + \alpha_3 SIZE_{i,t} + \alpha_4 FSlack_{i,t} + \alpha_5 LEV_{i,t} + \alpha_6 PERFroa_{i,t-1} + e_{i,t}$ | | | | |
| Sargan test of over-identifying restrictions (p-value) | 172. (0.00) | 50.95 (0.03) | - | 43.76 (0.06) |
| 2nd order autocorrelation Test (p-value) | - | 1.23 (0.22) | 1.18 (0.24) | 1.35 (0.18) |
| # of lags | - | - | - | 5 |
| # of instruments | 41 | 41 | 41 | 46 |
| # of groups | 500 | 500 | 500 | 500 |

In line with Arellano and Bond's (1991) findings, column (1) of Table 4 shows that the one-step S-GMM version of the Sargan-test is sensitive to heteroskedasticity (p-value is less than 0.05), leading to rejection of the validity of instruments for the model. Due to the presence of heteroskedasticity of unknown form, the results of repeated Sargan-test analysis based on two-step GMM (column 2), two-step GMM estimators with robust standard error (column 3), and two-step

S-GMM with time dummies which includes *p* lags of dependent variable (column 4) are then presented. The result shows that the two-step S-GMM with time dummies and *p* lags of dependent variable is regarded as the final estimator. This is because the higher p-value of the Sargan statistic (p-value is greater than 0.05) reflects that the instruments are exogenous and the model is appropriate. Therefore, the result suggests that this model is well specified and the estimators chosen are consistent.

Another important diagnostic test in dynamic panel data estimation is the Arellano-Bond (1991) test for autocorrelation between residuals (AR). This diagnostic test is employed to check the validity of instruments due to the dynamic nature of data (Arellano & Bond, 1991). Overall, the results of the diagnostic test AR(2) reported in Table 4 meet the requirements of accepting no second order serial correlation in the first-difference residuals (all respective p-values are greater than 0.05).

Table 5 documents that lagged corporate risk-taking ($RISKSTDroa_{i,t\text{-}1}$) has a positive and significant influence on contemporaneous accounting performance. The coefficient of regressing $PERFroa_{i,t}$ on $RISKSTDroa_{i,t\text{-}1}$ is 0.47 (z = 3.50) and it is significant at the 99 percent confidence level. The estimated coefficient implies that a one percentage point increase in $RISKSTDroa_{i,t\text{-}1}$ tends to increase the $PERFroa_{i,t}$ by 0.47 percentage point. The relationship between these two variables is commonly discussed in industrial organisation economics and strategic management. The results imply that corporate decision-makers in Malaysia engage in risk-averse behaviour when they expect this behaviour to bring in higher returns. In line with the risk-averse preference, managers are sensitive to the past accounting-based risk taking indicators as a basis for matching their response towards securing a safer investment (Teece, Pisano, & Shuen, 1997). Consequently, high accounting returns are expected in order to compensate for taking additional risks in the past. The above argument explains the existence of a significantly positive correlation between prior risk-taking and subsequent performance in the Malaysian listed companies. The finding confirms that the effect of risk on returns is not immediate but gradually realized over time (Abdullah et al. 2017).

Table 5

*The Impact of Company-specific Factors on Accounting-based Performance*

| Corporate Performance Indicator | $PERFroa_{i,t}$ |
|---|---|
| Constant | -84.84 (-5.44)*** |
| Lagged corporate risk-taking ($RISKSTDroa_{i,t-1}$) | 0.47 (3.50)*** |
| Contemporaneous corporate risk-taking ($RISKSTDroa_{i,t}$) | -0.28 (-1.82)* |
| Total assets ($SIZE_{i,t}$) | 6.48 (5.48)*** |
| Current ratio ($FSlack_{i,t}$) | 0.48 (1.90)* |
| Debt-to-equity ratio ($LEV_{i,t}$) | 0.002 (0.70) |
| Lagged dependent variable ($PERFroa_{i,t-1}$) | 0.21 (9.90)*** |
| Sargan test of over-identifying restrictions (p-value) | Pass |
| 2nd order autocorrelation Test (p-value) | Pass |
| Company-year observation | 3141 |
| T | 9 |

*Notes.* (1) Only the final models are reported; (2) The lagged dependent variable used as explanatory variables in this model is positive and has a highly significant effect (at 99% confidence level), implying that the model is genuinely dynamic; (3) *** and ** indicate 1% and 5% significance level respectively.

The dynamic panel estimation also reveals that the estimated coefficient of company size ($SIZE_{i,t}$) on performance is statistically positive and significant at the 99 percent confidence level, indicating that one percentage point increase in $SIZE_{i,t}$ would be reflected in 0.0648 percentage point increase in $PERFroa_{i,t}$. The positive relationship is consistent with the findings of past studies (Chang & Thomas, 1989; Majumdar, 1997; Mukherji et al., 1997; Dimson et al., 2002; Schwert, 2003; Mohd Ali, 2006; Aljifri & Moustafa, 2007; Yang & Chen, 2009; Saliha & Abdessatar, 2011; Muritala, 2012; Kipesha, 2013; Chaibi et al., 2014; Akben-Selcuk, 2016) hence, it verifies the importance of size in influencing the performance of the Malaysian listed companies. The result also reported that corporate performance is negatively (positively) afffected by $RISKSTDroa_{i,t}$ ($FSlack_{i,t}$ ), but the relationship is only marginally significant at the 90 percent confidence level. The former relationship appears to weakly support the argument made by previous studies (Bowman, 1980; Bettis & Hall, 1982; Whitelaw, 1994; Ang et al., 2006; Banerjee, Doran, & Peterson, 2007; Boermans & Willebrands, 2012) that contemporaneous risk has adverse effect

on contemporaneous performance. Meanwhile, the latter relationship is consistent with the implication stated in the behavioral theory of the firm as promoted by Cyert and March (1963) where the greater the financial slack, the better the performance of companies (Pfeffer & Salancik, 1978; Marlin & Geiger, 2015). However, leverage ($LEV_{i,t}$) is reported to have no influence on corporate performance. The insignificant relationship denies the implication stated in Jensen's (1986) free cash flow hypothesis, which maintains that greater debt financing would reduce the opportunistic behavior of managers at the expense of shareholders (Campello, 2006; Berger & Bonaccorsi di Patti, 2006; Franck, Huyghebaert, & D'Espallier, 2010).

## Conclusion

This study investigated the factors contributing to the accounting-based performance of the Malaysian listed companies over the period of 2004 to 2012. The result of multiple regressions using S-GMM estimation reveals the existence of a significantly positive correlation between lagged corporate risk-taking and performance. This implies that corporate decision-makers of the Malaysian listed companies engage in risk-averse behaviour when they expect this behaviour leads to higher returns. The preference of a more certain outcome to a less certain one is in line with Sharpe's (1964) CAPM model, but appears to challenge Cyert and March's (1963) behavioral theory of the firm. However, when contemporaneous corporate risk-taking is considered, minimal negative impact on performance is recorded. This finding inclines to support Bowman's paradox (1980) which suggests that the risk preference amongst Malaysian economic agents is not static but vary in accordance with their past experience. The practical implication of the finding for managers is that, the role of prior risk-taking should be acknowledged as one of the corporate strategies to improve companies's performance. The dynamic panel estimation also verifies the importance of company size as one of the accounting-based corporate performance determinants. This would mean that investors and fund managers should focus on large firms as they are associated with higher performance. Furthermore, the finding of this research also reports the importance of financial slack as one of the contributing factors of corporate performance, but the presence of a positive effect is minor. With regard to policy implication to policymakers such as the Securities Commission (SC), the outcomes could furnish this regulatory body with a more accurate and reliable risk-return assessment model. Having a more

relevant model can facilitate the regulator in disclosing a more comprehensive and relevant risk-return profile of listed companies. Better understanding and perception on the overall risk-return profile of listed companies is important so that this security market watchdog can regulate a more transparent risk-return information disclosure in companies' annual reports. Greater transparency would promote trust and confidence as well as protect the interest of investors and other stakeholders. As in other studies, there is a limitation to this study where the results are only applicable for the period from 2004 to 2012. Future research should lengthen the study period taking into account a more recent data set so as to capture the profile of risk-return relationship before and after the financial crisis within the past two decades of the economic cycle. In addition, we have only used ROA as the performance measure. There would be other accounting and market-based measures that could represent performance such as return on equity and total return index. Future studies could compare which among the measures would best represent the performance of a company.

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