The Effects of Institutional Ownership and Growth Opportunities on Malaysian Corporate Risk-Taking Behaviour

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Abstract----Purpose - This study aimed to highlight how institutional ownership could mitigate excessive corporate risk-taking. The investor may prefer high growth firm that exhibits high risk-taking. Thus, this study also examined firms' growth and its' effects on corporate risk-taking behaviour. Design/Methodology/Approach - Final samples for an estimation model consisted of 522 Malaysian non-financial firms selected from Bursa within 15 years from 2000 until 2014. This study utilized fixed panel regression and GMM to solve endogeneity problems. Findings - Its finding reported robust evidence that institutional ownership was negatively associated with corporate risk-taking. This study also confronted the endogeneity problem between institutional ownership, growth opportunity, and corporate risk-taking. The finding showed that institutional ownership has no causality relationship; conversely, growth opportunity has a causality relationship with corporate risk-taking. Originality/value - Most papers focused on banking and insurances paying less attention to non-financial firms, especially in the context of Malaysia as a developing country which ultimately requires better governance. This study highlighted on institutional ownership mitigate excessive risk-taking and encourage good governance through their monitoring role. In the study, the importance of growth opportunity with respect to corporate risk-taking to maximize shareholder wealth and stimulating economic development in Malaysia was highlighted. The effect of growth opportunity on corporate risk-taking exhibited mixed results.

Keywords--- Institutional ownership, growth opportunity, corporate risk-taking, corporate governance, excessive risk-taking

I.   INTRODUCTION

Understanding effects of institutional ownership on corporate risk-taking behaviour is essential for the reason that excessive risk-taking will result in massive bankruptcies and uncertainty in the market that could eventually lead to a financial crisis. Prior studies on corporate risk-taking mainly sought after evidences from developed markets such as United States (Claessens, Djankov and Nenova, 2000; John et al., 2008; Paligorova, 2010; Wright, Ferris, Sarin and Awasthi, 1996), United Kingdom and German (Eling and Marek, 2014)and Japan (Nakano and Nguyen, 2012). In Malaysia context, prior studies on corporate risk-taking mainly focused on financial firms such as insurance firms (Hock Ng, Lee Chong, and Ismail, 2013), and banking institutions (Nordin and Hamid, 2013; Azureen and Anis, 2013; Ab. Jamil, Mohd. Said, and Mat Nor, 2015).

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These studies examined associations between corporate risk-taking and performance of insurance companies as well as banking institutions, however, the key question, "Can institutional investors mitigate excessive corporate risk-taking behaviour?" has not been answered. As a matter of fact, this question is essential for the sake of firms' sustainability.

Risk-taking is argued to be an important source of competitive advantages (Rumelt, 1974; Porter, 1980). Risk can never be eliminated from the business because it creates opportunities. Thus, risky investment should be managed instead of abandoned. Though firms' value is created by taking risk, doing so excessively could be harmful to firms (Carey and Stulz, 2005; Schwarcz et al., 2015). A key factor contributing to the global financial crisis in 2008 was excessive risk-taking, mainly caused by poor decisions and bad judgment (Schwarcz, 2016). In addition, Agency Theory suggests that misalignment in distributing incentives for shareholders and managers to monitor risk-taking activities (Jensen and Meckling, 1976) encourages them to take excessive risk-taking to gain profits(Citci, 2016).

Moreover, institutional investor can influence risk-taking behaviour in firms that affects their abilities to compete and remain sustainable in the markets (Wright et al., 1996). Institutional investors collect information that aids in monitoring managers because they provided with appropriate incentives, to maximize their return(Amihud, Yakov and Lev, 1981; Grossman, Sanford and Hart, 1980; Shleifer and Vishny, 1986). Therefore, institutional investors as monitoring device influence corporate governance in reducing agency conflict by acknowledging differences in risk-taking preferences across firms. This study examined how institutional ownership affected corporate risk-taking behaviour by utilizing a sample consisted of non-financial public-listed firms in Malaysia.

On the other hand, this study also presented firms' growth opportunities and its' effects on corporate risk-taking behaviour. This relationship could affect decision-making risk choices of corporate investment decisions and their consequent implications for investors in choosing their investment. Presence of firms' growth opportunities enhances firms' performance and shareholders' wealth that results in contribution in terms of job creation and economy development (Stangler, 2010; Wright et al., 1996) and increment of firms' values(Galai and Masulis, 1976).The demand of high-quality innovation and improvements in the global market promote more escalated opportunities and competition which also force firms to take more risky investment and projects to maximize shareholders' wealth (Cao, Simin, and Zhao, 2008; Zingales, 2000). However, previous studies produced mixed results whether firms' growth opportunities led to mounting or diminishing risk-taking (John et al., 2008; Nakano and Nguyen, 2012; Wright et al., 1996).The importance of firms' growth is the significance of risk choices of a firm that may affect the investment pattern by the investors. For example, investors more likely to prefer high firms' growth that exhibits higher risk-taking that increased income stream.

Malaysia has diverse social, economic and political environments, compared with other countries (Aman and Ismail, 2017). Though Malaysia is looking forward to becoming a developed country(Nixon, Asada, and Koen, 2017), as well as staying competitive in a complex and dynamic global economy, firms have to take greater risks to innovate and create added values. At this point, good governance is important to mitigate excessive risk-taking behaviour. Thus, institutional ownership is employed as external governance to mitigate excessive risk-taking. An

insight on how institutional ownership can mitigate excessive corporate risk-taking behaviour would be significant for Malaysian's non-financial firms which practice poor governance.

The findings of this study would contribute to corporate finance literature, specifically on the area of corporate governance related to importance of institutional ownership as external governance mechanism in mitigating excessive risk-taking behaviour, in addition to firm growth and its effect on corporate risk-taking behaviour. This study contributed to the literature in several ways, and it would be beneficial to the academicians. They may gain additional insights of corporate risk-taking issues such as the global financial crisis due to excessive risk-taking and a relationship between institutional ownership and corporate risk-taking. It examined the key determinants and provided empirical findings that risk-taking behaviour was affected by the role of institutional ownership as monitoring devices and holding large share to influence the management in selecting necessary risky investment (Faccio, Marchica, and Mura, 2011). In addition, the findings of this study can be a reference or check and balance for the policymakers in creating more beneficial policies and customizing current regulations to match institutional ownership background. This policy could attract more investments into Malaysian firms to assist and promote governance in Malaysian firms to stay sustainable, as well as to stimulate Malaysia economy through a chain reaction.

The empirical study may help investors and corporate managers to increase their understanding of the levels of risk-taking in Malaysian firms. By looking at the finding of this study to control for firm-specific variable and how its' affect corporate risk-taking behaviour in Malaysian firms through the characteristic of the firms such as firm size and firm age. It would help them make better investment decisions due to firms' exclusive setting that does not fit all investors since different investors and corporate managers tend to have different preferences for risk-taking behaviour. In the global market, the environment is ever-changing, and new risks appear persistently. This study exposed the society to the consequences of excessive risk-taking by investors and the important role of institutional ownership in mitigating excessive risk-taking through monitoring. The society must be informed of the consequence of excessive risk-taking that might result in unemployment, loss of income and cancerous social issues such as poor education, health, and nutrition.

The rest of the paper was organized as follows. In Section 2, this study synthesized the literature review. In Section 3, the researcher described the pinpointed sample and variables of the study and descriptive statistics. Section 4 reported empirical results of a relationship between institutional ownership and corporate risk-taking. Section 5 at the end concluded and suggested implications.

II. LITERATURE REVIEW

Institutional ownership can play its role in mitigating risk-taking and agency conflict, as suggested by prior studies that have confirmed the capabilities of institutional ownership to monitor and control managerial activities (Admati, Pfleiderer, and Zechner, 1994; Huddart, 1993; Shleifer and Vishny, 1986). Previous studies suggested relationships among institutional ownership in the firms and corporate risk-taking from different perspectives. Prior studies did not reach a consensus on the effects of the relation. Few studies indicated that institutional investors might discourage decisions that reduced corporate risk-taking (Boubakri, Cosset, and Saffar, 2013; Hill and Snell, 1988; Paligorova, 2010). Though, other studies indicated that institutional ownership in a firm was significantly and

positively associated with corporate risk-taking behaviours (Erkens, Hung, and Matos, 2012; Hill and Hansen, 1991; Koerniadi, Krishnamurti, and Tourani-Rad, 2014; Wright et al., 1996).

On the other hand, institutional ownership is acknowledged to be able to affect the firms' level of total and systemic risk exposure. Institutional ownership could mitigate high risk-taking through monitoring the managers or taking over control of the firms as institutional ownership has greater incentives to effectively monitor management (Admati, Pfleiderer, and Zechner, 1994; Huddart, 1993; Maug, 1998). Empirical studies found that institutional ownership of Canadian non-financial firms has a negative influence on corporate risk-taking behaviours (Gadhoum and Ayadi, 2003). Previous studies reported a causal relationship between corporate risk-taking and institutional ownership using evidence from US firms (Paligorova, 2010).

Risk-taking is a critical component to corporate success, defined as the uncertainty of a company's income stream (Bowman, 1980, 1984; Fiegenbaum, 1990; Fiegenbaum and Thomas, 1988). Globalization of technological development, trends in customers' demands, and highly competitive market continuously lead to challenging worldwide businesses (Westman, 2009). The nature of risk-taking behaviour can significantly affect corporate performance. Prior research suggested literature on innovation, organizational change and general management that have a significant influence on risk-taking behaviour and performance in the future (Kanter, 1983; Schon, 1971). Empirical studies suggested that global factors in financial settings that induced co-movements in financial settings across borders encouraged the firm to take greater risks (Bruno and Shin, 2014). In brief, the global factor stimulates the firms to be risk seekers that result in increased variability of firms' returns (Reeb and Baek, 1998).

However, the primary factor causing an economic catastrophe is excessive risk-taking that consequently leads to market turmoil in the global financial crisis in the year2008 (Schwarcz, 2016). Excessive risk-taking mostly results from poor decisions, bad judgment, and greed. Even though they do not result in criminal intent, however, most of the action eventually lead to the financial crisis (Hurt, 2014). In brief, risk-taking can contribute positively, as well as cause harm to firms' performance if the level of risk-taking is excessive. According to agency theory,managers have different attitudes when it comes to risk-takingin which they might be risk seeker or perhaps risk adverser(Jensen and Meckling, 1976). Therefore, agency problem that exists fromself-interest of managers is more complex in large and diversified organization due to the complexity in their products and operations (Westman, 2009). The shareholders andmanagers in terms of the relationship are utility maximizersthat the managers tend not acting in the best interests of the shareholders.

Firms with more massive corporate innovations have higher levels of firm risk-taking behaviour. Increment in growth opportunities will result in more capital and market gains. Globalization of the world's economies provides a manager with more opportunities for growth while at the same time increases competition among industry players. Additional evidence supported that smaller firms motivated to capture riskier growth opportunities because it was easier to access to capital widening and also as an option of growth opportunities (Fama and French, 2001). Managers pursue growth-oriented risk-taking strategies to increase earnings volatility. Therefore, agency conflicts among managers and shareholders lead to inappropriate decision making in firms' growth opportunities due to higher flexibility in their future investment options.

Previous studies indicated that high growth firms could affect the firms' future performance and firms' value. Firms may bring more capital gains to investors because investors as taxpayers would prefer to invest in a capital gain investment that would delay tax payments and avoid double taxation (Hovakimian and Tehranian, 2004). The demand for globalization encourages more growth opportunities and competitive that forces firms to take riskier investment projects to maximize shareholders' wealth (Cao et al., 2008; Zingales, 2000). Thus, high growth firms could benefit investors through high risk-taking. However, this may consequently lead to excessive risk-taking as previous studies suggest that high growth firms related to high risk-taking that improve firms' value (Galai and Masulis, 1976). The firms could choose the growth option that is necessary to increase high risk-taking and to improve firms' value. On the other hand, a causality relationship between corporate risk-taking and firm growth indicates that higher firm growth is a more likely encouraging implementation of riskier investment policy (John et al., 2008).

Hypothesis Development

Agency theory suggests that shareholders are not always in line with the interest of managers(Ahmad and Jusoh, 2014; Jensen and Meckling, 1976; Rashid, 2018). The existing viewpoints on the monitoring role of institutional ownership and its effect on corporate risk-taking behaviour propose the potentials in improving firms' performance(Elyasiani and Jia, 2010). Institutional investors could mitigate excessive risk-taking by monitoring managers' attitude and removing managers with poorly performing (Denis and Serrano, 1996). They could also take over control of the firms as institutional investors have more significant incentives to effectively monitor management(Admati et al., 1994; Chen, Harford, and Li, 2007; Maug, 1998; Tee, Gul, Foo, and Teh, 2017). Their monitoring role could reduce agency costs due to their higher stakes and relatively lower coordination costs compared to small ownership, whose monitoring costs are prohibitively expensive(Shleifer and Vishny, 1986). Previous studies suggest that a negative relationship between institutional ownership and corporate risk-taking in the context of US (Paligorova, 2010). Based on these arguments, this study conjectured that:

Hypothesis 1: There is a significant negative relationship between institutional ownership and corporate risk-taking.

Risk-taking behaviour is a vital firms' growth opportunity. It is interesting to examine what conditions the shareholders might encourage corporate risk-taking in order to exploit potential benefits for the sake of firms' growth. Firms' growth opportunity has possibilities to possess its external environment such as locating it in attractive industries while its internal resources are among others talented human resources, a valuable culture, or proprietary technology (Barney, 1991; Lado, Boyd, and Wright, 1992; Wright, Ferris, Hiller, and Kroll, 1995; Wright et al., 1996). Previous studies found that corporate risk-taking and firm growth were positively significant that high growth firm led to high risk-taking that it eventually increased the firm's value (John et al., 2008). Managers of slow-growing firms reduced risk-taking by not investing in innovation investment (Morck, Wolfenzon, and Yeung, 2005). Therefore, a low level of risk-taking results in inadequate resources allocation and decreased growth opportunity (Durnev, Artyom, Li, Morck, and Yeung, 2004). On the other hand, the demand on globalization encourages more opportunities and competition that forces firms to take riskier investment projects to maximize

shareholders' wealth (Cao et al., 2008; Zingales, 2000). Thus, increasing corporate risk-taking in the absence of growth opportunities would be economically irrational. Based on the arguments, this study conjectured that:

Hypothesis 2: There is a significant relationship between firm growth opportunities and corporate risk-taking.

III. RESEARCH METHODOLOGY

The sample consisted of non-financial firms, listed on the main board of Bursa Malaysia. The sample excluded financial firms because of the differences in terms of financial structure and regulations as compared to other industries (Rajan and Zingalis, 1995). This study utilized a panel data set consisting of a time-series and longitunal-series data. The panel data set covered a 14-year sample period from the year 2000 to 2014.After excluding missing observations, the final sample consisted of 522 firms with 3,766 firm-year observations. The sample firms and the firm-specific information were collected from DataStream database, whereas the data on institutional ownership retrieved from Thomson One database. Institutional ownership in non-financial firm consists of banks, insurances companies, pensions, hedge funds, REITs, investment advisors, endowments and mutual funds.

This study considered four models with different measures of risk-taking to examine the relationships between institutional ownership, growth opportunity and corporate risk-taking on non-financial firms in Malaysia. Following previous studies (Acharya, Amihud, and Litov, 2011; Boubakri et al., 2013; Faccio et al., 2011; Hilary and Hui, 2009; John et al., 2008), this study used volatility of corporate earnings as a proxy for corporate risk-taking that also measured the level of firms' business risk(Paligorova, 2010). *Risk1*was a standard deviation of return on asset (ROA) over three overlapping years. Volatility of returns was a standard proxy for risk-taking in the literature (Boubakri et al., 2013; Faccio et al., 2011; Nakano and Nguyen, 2012). To ensure robust findings, this study also used a difference between maximum and minimum values of return on assets (ROA) to proxy corporate risk-taking (Boubakri et al., 2013). This proxy termed as *Risk2*. Return on asset (ROA) defined as the ratio of earnings before interest and taxes to total assets. These two variables capture the riskiness of investment decisions or outcomes (Boubakri et al., 2013; Faccio et al., 2011; Kusnadi, 2015). The third proxy of a risk-taking variable was *Leverage*; a measure of the riskiness of corporate financing choices (Faccio et al., 2011). High leverage firms are considered to be high risk and vice versa (Tong and Ning, 2004). The financial debt is the sum of long term debt and short term debt. Firms' leverage is measured by total debt to assets, denoted as *Leverage1*, and also total debt to total capital, denoted as *Leverage2*.

This study utilized fixed panel regression in which it assumed that unobserved factors affecting corporate risk-taking and the normality were still approximately correct in large samples even without normality of errors (Vijverberg and Hasebe, 2015). Fixed panel regression adjusted for robust standard error because the firms possessed both longitunal-series and time-series data. However, the panel data were unbalanced because some firm-year observations are missing. Moreover, this study employed stata to analyze a weak relationship between institutional ownership and corporate risk-taking. This study estimated regressions using fixed panel ordinary least squares (OLS) and calculated robust standard errors, clustered by firms. Specifically, this study estimated the following model:

$Risk_{it}= \beta0 + \beta1 Institutional\text{-}Ownership_{it} + \beta2 Growth\text{-}Opportunity_{it} + \beta3 Firm\text{-}Size_{it} + \beta4 Firm\text{-}Age_{it} + \beta5 Tangibility_{it} + \beta6 Profitability_{it} + \beta7 Leverage_{it} + Year\ Dummies + \varepsilon_{it}$

IV. RESULTS AND DISCUSSION

Table 4.1 presents the sample distribution of 522 non-financial firms following years and industries from the year 2000 to 2014. Sample firms were grouped by industry categories with reference to the Bursa Malaysia Industry Classification. From the table, 41.66% of firms were industrial product producers, followed by consumer products at 19.70% and construction at 12.32%. Sample firms involved in hotel and mining industry is 0.61% and 0.42%, respectively. As a result, the sample distribution by year suggested unbalanced panel data.

Table 4.1: Distribution of Sample Firms' Year and Industry

Distribution of Sample Firms

Panel A : By Year			Panel B : By Industry		
Year	**Frequency**	**Percentage**	**Industry**	**N**	**%**
2000	94	2.50	Construction	464	12.32
2001	92	2.44	Consumer product	742	19.70
2002	105	2.79	Industrial product	1,569	41.66
2003	166	4.41	Mining	16	0.42
2004	211	5.60	Plantation	365	9.69
2005	248	6.59	Property	92	2.44
2006	327	8.68	Information technology	35	0.93
2007	303	8.05	Trading and Services	150	3.98
2008	277	7.36	Hotel	23	0.61
2009	334	8.87	Others	310	8.23
2010	376	9.98	**Total**	**3,766**	**100.00**
2011	325	8.63			
2012	329	8.74			
2013	297	7.89			
2014	282	7.49			
Total	**3,766**	**100**			

Table 4.2 reports the descriptive statistics of the identified variables. On average, the sample firms took 3.37% (7.78%) of risk as measured by *Risk1* (*Risk2*). The average equity stakes held by institutional shareholders was 5.65%, with maximum ownership of 83.60%. The mean value of growth opportunity, measured the market to book ratio was -0.1704. This study suggested that on average, the sample firms' market value was below the book value. The mean values of firm size and profitability were 5.59% and 4.71%, respectively. On the other hand, the average tangibility ratio was 38.21%. In terms of leverage, sample firms maintained an average of 20.74% (25.81%) of debt ratio, measured by total debt to total assets (total debt to total capital).

Table 4.2: Summary Statistics of the Identified Variables

Variables	Mean	Standard Deviation	Min	Max
Risk1 *(Standard deviation of ROA over three overlapping year)*	0.0337	0.0858	0.0007	2.7060
Risk2 *(Difference between the maximum value and the minimum value of ROA)*	0.0778	0.1866	0.0016	5.7418
Institutional Ownership *(% of shares held by institutional ownership)*	0.0565	0.1141	0.0000	0.8360
Growth opportunity *(The ratio of market to book)*	-0.1704	0.7104	-2.4079	4.1534
Firm size *(The natural logarithm of total assets in RM)*	5.5980	0.5963	4.2845	8.0440
Leverage 1 *(Total debt to total assets)*	0.2074	0.1695	0.0000	1.0000
Leverage 2 *(Total debt to total capital)*	0.2581	0.2571	-8.5013	1.4246
Tangibility *(The ratio of net fixed assets to total assets)*	0.3821	0.2102	0.0001	0.9634
Profitability *(The ratio of EBIT to total assets)*	0.0471	0.1256	-0.7377	5.7610
Firm-year observation (N)	3766	3766	3766	3766

Table 4.3 presents pearson correlation matrix for the variables. The univariate relationship suggested that there was a negative relationship between institutional ownership and corporate risk-taking with a correlation coefficient of -0.0607 for *Risk1* and -0.0639 for *Risk2*. As expected, the univariate relationship confirmed that growth opportunity was positively related to corporate risk-taking. The correlation test indicated that this study did not suffer from multicollinearity problem. This study has confirmed by the variance inflation factor (VIF) test, which produced a mean VIF of 6.42. Moreover, a score lesser than 10.00 suggests an insignificant multicollinearity problem.

Table 4.4.1 reports the fixed panel estimation for the risk-taking model. The results suggested that institutional ownership was negatively associated with *Risk1*, *Risk2* and *Leverage1*. This finding was consistent with the empirical studies of Gadhoum and Ayadi (2003), and Paligorova (2010) that institutional ownership mitigated high risk-taking through monitoring and controlling the management performance. In line with the arguments of the study, this evidence supported Hypothesis 1, which posited that institutional ownership could mitigate excessive risk-taking. The negative relationship was economically significant too. By referring to Model 1 (*Risk1*) and Model 2 (*Risk2*), high institutional ownership was able to reduce firms risk-taking level by 6.06%[1] (relating to mean of

3.37%) and 6.26%[2] (relating to mean of 7.78%), respectively. In Model 3 (*Leverage1*), high institutional ownership reduced the risk-taking level by reducing the firms' leverage by 7.77%[3] (relating to a mean of 20.74%).

Coefficient of variable or standard deviation of institutional investor, divided by the mean of *Risk1, Risk2 and Leverage1*.

[1] (-0.0179 x 0.1141) / 0.0337 = -0.0606 (6.06%)

[2] (-0.0427 x 0.1141) / 0.0778 = -0.0626 (6.26%)

[3] (-0.1412 x 0.1141) / 0.2074 = -0.0776 (7.77%)

Table 4.3: Pearson Correlation Matrix for the Observed Variables

	Risk 1	Risk 2	Institutional Ownership	Growth Opportunity	Firm Size	Leverage 1	Leverage 2	Firm Age	Tangibility	Profitability
Risk1	1.0000									
Risk2	0.9991***	1.0000								
Institutional Ownership	-0.0607***	-0.0639***	1.0000							
Growth Opportunity	0.0572***	0.0614***	0.3151***	1.0000						
Firm Size	-0.1327***	-0.1381***	0.5361***	0.1782***	1.0000					
Leverage1	0.0084	0.0083	0.0214	-0.0376**	0.1655***	1.0000				
Leverage2	-0.0178	-0.0189	0.0293*	-0.0198	0.1590***	0.7535***	1.0000			
Firm Age	-0.0104	-0.0114	0.0722***	-0.0151	0.2858***	-0.0807***	-0.0816***	1.0000		
Tangibility	-0.0350**	-0.0348**	0.0306*	-0.0227	0.0088	0.1369***	0.0633***	0.0205	1.0000	
Profitability	0.3186***	0.3140***	0.1056***	0.1964***	0.0923***	-0.1613***	-0.1272***	0.0274*	-0.0886***	1.0000

*The superscript asterisks ***, ** and * denote statistical significance at the 1%, 5% and 10% levels.*

Table 4.4.1: Panel Ordinary Least Square (OLS) with Robust Standard Errors

Variables	(1) Risk1	(2) Risk2	(3) Leverage1	(4) Risk1	(5) Risk2	(6) Leverage2
Institutional Ownership	-0.0179**	-0.0427***	-0.1412***	-0.0219***	-0.0513***	-0.1944***
	(-2.4857)	(-2.6379)	(-4.7673)	(-2.9182)	(-3.0585)	(-5.1464)
Growth Opportunity	0.0051	0.0130	-0.0041	0.0049	0.0127	-0.0027
	(1.3529)	(1.5803)	(-0.7117)	(1.2697)	(1.4901)	(-0.2269)
Firm Size	-0.0313***	-0.0698***	0.0766***	-0.0292***	-0.0652***	0.1081***
	(-4.5624)	(-4.7251)	(11.7535)	(-4.3965)	(-4.5527)	(7.0358)
Firm Age	0.0058***	0.0128***	-0.0256***	0.0052***	0.0115***	-0.0411***
	(3.4853)	(3.4175)	(-6.0071)	(3.2304)	(3.1559)	(-3.7572)
Tangibility	0.0051	0.0107	0.1384***	0.0101	0.0215	0.1251***
	(0.6122)	(0.5778)	(8.9409)	(1.0737)	(1.0418)	(4.8216)
Profitability	0.2447**	0.5240*	-0.1932*	0.2390*	0.5115*	-0.2471*
	(1.9690)	(1.9268)	(-1.6717)	(1.8834)	(1.8413)	(-1.6904)
Constant	0.2212***	0.4975***	-0.2341***	0.2145***	0.4827***	-0.3106***
	(5.5883)	(5.7947)	(-5.0575)	(5.4871)	(5.6890)	(-4.6443)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,766	3,766	3,766	3,766	3,766	3,766
Adjusted R-squared	0.1535	0.1535	0.1368	0.1471	0.1470	0.0946

*The superscript asterisks ***, ** and * denote statistical significance at the 1%, 5% and 10% levels.*

Nonetheless, this study did not manage to find evidence to support the existence of a positive relationship between growth opportunity and risk-taking; though, the reported coefficient was positive. Therefore, the relationship between growth opportunities and corporate risk-taking needed further exploration, as the results did not discover any evidence to support Hypothesis 2 in the context of Malaysia. The findings on the relationship between institutional ownership, growth opportunity and corporate risk-taking remained consistent when Model 5 and Model

6 were re-estimated using total debt to total assets(*Leverage1*)and total debt to total capital (*Leverage2*) as aproxy of leverage.

In particular, this study found that firm size loaded negative for *Risk1* and *Risk2,* and it was statistically significant at 1% level. This result was consistent with prior studies that suggested that larger firms were more likely to have stable operations in which the returns were less volatile, thus, less prone to taking excessive risk. However, firms' size was positively significant with *Leverage1*at 1% level. The different signs suggested that large-size firms were less likely to take up risk related to investment decisions or outcomes as measured by *Risk1* and *Risk2* that captured the volatility of corporate earnings. On the other hand, large size firms have inclined to take up risk related to corporate financing choice, which was measured by *Leverage1*.

Conversely, firm age was positively related to corporate risk-taking, and this relationship was significant at 1% level for *Risk1* and *Risk2*; it was inconsistent with the expected negative relationship. Nevertheless, when risk-taking level was measured by *Leverage1*, the coefficient was found to be negatively significant at 1% level, suggesting that established firms were less prone to risk-taking, while new firms preferred high risk investment because they were more aggressive and need to take higher risk to grow more rapidly(Marshall and Marshall, 1920; Stinchcombe and March, 1965). The change of signs implies different risk-taking preferences; in this case, it is between riskiness related to investment outcomes and corporate financing choices.

Robustness Check

This study continued with additional test to an ensure robustness of reported results in Table 4.4.2. The baseline regression was re-estimated using an alternative sample that merely included observations with institutional ownership. Firm-year observations with 0% of institutional ownership had excluded from the sample. The baseline regression was also repeated using sales growth as the alternative proxy of growth opportunity.

Table 4.4.2 reports the fixed panel regression with robust standard error for the alternative sample firms that solitarily included firm-year observations with institutional ownership greater than 0%.The reported results confirmed that a negative relationship between institutional ownership and corporate risk-taking remained statistically significant at 1% level in all six models. This study further supported Hypothesis 1 that argued institutional ownership could mitigate firm risk-taking behaviour. On the other hand, growth opportunity was found to be positively related to risk-taking in Model 1, Model 2, and Model 4 to Model 6 at 5% significance level. This study was consistent with the findings from previous studies that high growth firms preferred high risk-taking behaviour(Barney, 1991; Lado et al., 1992; Wright et al., 1996).

Table 4.4.2: Panel Ordinary Least Square (OLS) Regression using Alternative Sample

Variables	(1) Risk1	(2) Risk2	(3) Leverage1	(4) Risk1	(5) Risk2	(6) Leverage2
Institutional Ownership	-0.0233*** (-3.8269)	-0.0552*** (-3.9088)	-0.0687** (-2.2807)	-0.0233*** (-3.8456)	-0.0552*** (-3.9283)	-0.0821** (-2.3146)
Growth Opportunity	0.0052**	0.0132**	0.0057	0.0052**	0.0131**	0.0168**

	(2.2479)	(2.4655)	(0.9125)	(2.2157)	(2.4315)	(2.0298)
Firm Size	-0.0103***	-0.0245***	0.0849***	-0.0104***	-0.0245***	0.1110***
	(-4.6975)	(-4.8885)	(11.8800)	(-4.6595)	(-4.8485)	(12.4219)
Firm Age	0.0025	0.0058	-0.0199***	0.0025	0.0058	-0.0243***
	(1.5146)	(1.4946)	(-3.7330)	(1.5075)	(1.4872)	(-3.7626)
Tangibility	-0.0006	-0.0008	0.1120***	-0.0005	-0.0005	0.0984***
	(-0.0806)	(-0.0421)	(5.7594)	(-0.0658)	(-0.0272)	(4.1192)
Profitability	-0.0028	-0.0137	-0.4468***	-0.0023	-0.0127	-0.6583***
	(-0.0668)	(-0.1438)	(-7.7397)	(-0.0551)	(-0.1314)	(-8.5864)
Constant	0.1192***	0.2843***	0.0910	0.1193***	0.2845***	0.0762
	(5.9103)	(6.0036)	(1.4042)	(5.9428)	(6.0366)	(1.2189)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,165	2,165	2,165	2,165	2,165	2,165
Adjusted R-squared	0.0577	0.0606	0.1832	0.0578	0.0606	0.2015

*The superscript asterisks ***, **, and * denote statistical significance at the 1%, 5% and 10% levels.*

Endogeneity

This study addresses the possible endogeneity problem related to the results. In the presence of reverse causality, estimations produce biased results. The endogeneity problem is that institutional ownership could select firm exhibit higher risk-taking. This choice motivated by evidence suggested by Diez-Esteban et al. (2014) and Paligorova (2010) that corporate risk-taking was positively affected by institutional ownership. It assumed that institutional ownership variables influenced corporate risk taking, or there was a possibility that it could be the other way around. For example, institutional ownership tends to invest in the firms' exhibit higher risk taking. One of the ways to overcome this problem is by utilizing Generalize Method of Moment(GMM). Therefore, to analyze to which endogeneity due to reverse causality was a problem, the following test was conducted.

In the presence of endogeneity, OLS and fixed-effects panel estimations will generate biased parameter estimations, while the dynamic GMM panel models will be more consistent. However, if the regresses are exogenous; therefore, parameter estimates from OLS and fixed-effect specifications will be more efficient than their dynamic GMM counterparts. Therefore, it is crucial to establish the presence of endogeneity in institutional ownership and corporate risk-taking relation before proceeding with dynamic GMM estimations. Hence, in

agreement with Schultz et al. (2010), this study conducted a formal test of endogeneity using the Durbin Wu Hausman (DWH) Test (Durbin, 1954; Hausman, 1978; Wu, 1973).The test results, which reported in Table 4.5 indicate the presence of endogeneity. Therefore, this study reported dynamic GMM estimations.

Table 4.5: A System GMM Regression Analysis

Variables	System GMM (One-Step)	System GMM (Two-Step)
ΔRisk1	0.000***	0.000***
ΔRisk2	0.691	0.691
ΔRisk3	0.000***	0.000***
ΔRisk4	0.000***	0.000***
Institutional Ownership	0.904	0.800
Growth Opportunity	0.036**	0.031**
Firm Size	0.177	0.078*
Firm Age	0.630	0.293
Tangibility	0.021**	0.015**
Profitability	0.004***	0.195
Constant	0.011**	0.001***
n	3033	3033
Arelanno-Bond Test (1)	0.000	0.000
Arelanno-Bond Test (2)	0.141	0.140
Sargan Test	0.000	0.000
Hansen Test	0.199	0.199

The superscript asterisks ***, **, and * denote statistical significant at

*** p<0.01, ** p<0.05, and * p<0.1 percent level

A relationship between institutional ownership and corporate risk-taking was a dynamic nature. The dynamic system GMM of choice uses a stacked system consisting of one-step and second-step; it assumes that all variables in Table 4.5are endogenous. Table 4.5 exhibits the results of dynamic panel GMM regressions. The AR (1) test yielded a p-value of 0.000 (0.000). The AR (2) test yielded a p-value of 0.141 (0.140) which means this study did not manage to reject the null hypothesis of second-order serial correlation. The results revealed Hansen J-statistics of over-identification with a p-value of 0.199 (0.199), and as such, this study also failed to reject the hypothesis. Thus, this study's instruments were valid.

Table 4.5 shows that a variable of institutional ownership is insignificant, but growth opportunity was significant at 5% level. On the other hand, *Risk1*, *Risk3* and *Risk4*were significant at 1% level. Considering all other control variables, it was interesting to realize the fact that only the coefficient of firm age was insignificant. The results in Table 4.5 supported this study's main hypothesis, assuring that potential problem due to endogeneity,

omitted variables and reverse causality did not undermine main conclusion. This study was drawn from panel regressions and confirmed the role of institutional ownership in driving corporate risk-taking.

V. CONCLUSION

This study employed a sample of 522 non-financial firms from Bursa Malaysia to investigate the effects of institutional ownership and growth opportunity on corporate risk-taking. This study was essential as the effects of excessive risk-taking will result in massive bankruptcies and public crises if investors took excessive risky investment projects or agreed on unnecessary risk. This study suggested that institutional ownership as external governance mechanism was negatively associated with corporate risk-taking. It was consistent with previous studies such as by Narjess Boubakri et al. (2013), Gadhoum and Ayadi (2003) and Paligorova (2010). Institutional ownership had commonly known as a monitoring device in corporate governance that could mitigate excessive risk-taking and reduce agency conflict (Jensen and Meckling, 1976). This argument was parallel with the results of this study. This study also confronted with endogeneity problem between institutional ownership, growth opportunity and corporate risk-taking. The finding showed that institutional ownership has no causality relationship with corporate risk-taking, but growth opportunity has it. Previous studies found that firms' growth opportunity associated with corporate risk-taking tended to be uncertainty(Fama and French, 2001; Geroski, 2005; Pastor and Veronesi, 2003). Similarly, the finding of this study suggested that the relationships between firms' growth opportunity and corporate risk-taking were diverse in the context of Malaysian firms. Hence, there was a room for improvement and further examination on the relationship between growth opportunity and corporate risk-taking.

This study contributed to the literature on corporate risk-taking by investigating the roles of institutional ownership and growth opportunities in affecting corporate risk-taking behaviour. This empirical study was to provide facts of roles of institutional ownership in mitigating corporate risk-taking through monitoring. This study would prevent financial crisis caused by taking excessively risky investment by the investors. In brief, this study discovered that institutional ownership played an essential position in corporate risk-taking by controlling and monitoring the firms in mitigating excessive risk-taking. The issue of corporate risk-taking is relatively unexplored. The study on the relationship between firms' growth opportunities and corporate risk-taking is vague. Thus, there is a need to explore further its' intensively since firms' growth is essential because investors may choose high growth firms that exhibit higher risk-taking.

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