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The Use of Financial Derivatives and Earnings Volatility: Evidence from Malaysia

Chua Yong Xia*, Phua Lian Kee, Lok Char Lee

School of Management, Universiti Sains Malaysia, 11800, Penang, Malaysia

Abstract

In this turbulent business environment, each and every company will face various types of business risk such as foreign currency risk, interest rate risk, commodity risk and others. As the top management of an organization, managers could not escape from handling such risks when making economic decisions. Therefore, the top management of an organization has the responsibility to eliminate the risks into an acceptable level before embarking into any business transactions. Financial derivatives have been commonly used to hedge an organization's risk and reducing the probability of the company facing default. The usage of derivatives will directly affect firms' earnings volatility. Hence, this paper aims at providing evidence on what is the tendency of Malaysian companies in using derivatives as risk management tool. As financial derivatives are used as a risk management tool, it can directly reflect on the companies' earnings and cash flows. Therefore, in this study, we examine the effect of financial derivatives, director remuneration and board independence on earnings volatility. By using the top 100 non-financial listed companies in Malaysia, multiple regression analysis was conducted on the research model. The results exhibit that 54% of the top 100 Malaysian listed companies use derivatives. While, out of the top 100 listed companies, around 46 companies or 46% of firms are not using derivatives instrument. This shows that the usage of derivatives in Malaysia is not very common. In addition, the results show that the usage of derivatives is negatively related to earnings volatility while the directors' remuneration and board independence have no significant relationship with earnings volatility. The findings provide empirical evidence that the usage of derivatives can mitigate earnings volatility.

Keywords: Usage of Financial Derivatives, Earnings Volatility, Directors Remuneration, Board Independence, Malaysia

1. INTRODUCTION

In this globalised business environment, most of the participants in business may fantasize about a world with limitless profit and free of risk. However, the reality is opposite from what we have dreamed. All businesses face different types of risk. As businesses going global, they are exposed to a variety of business opportunities and threats. Most of these business risks are unavoidable in the course of normal businesses. Hence, when firms undergone good or bad times, the earnings and stock price of the firms will reflect its performance. Earnings is the single most important output of the accounting system. (Graham et al., 2005) Users of financial statements will look at the earnings figures. Perhaps, earnings is the single most studied number in a company's financial statements. From the CEO to research academic, everyone is infatuated with the bottom line of the firms and concerned about earnings. Earnings is the driver of stock prices. Strong earnings generally will result in the stock price moving up and indicate the growth of the companies. Meanwhile, if the earnings are very unstable, it may indicate that the firms' financial health is not good and risky. Earnings alone become an important element to be considered by all the stakeholders. This is the reason why earnings information is so importance to all the

*Corresponding author.
E-mail: chuayongxia@yahoo.com

financial users especially shareholders. Earnings is studied because it represents a direct link to a company performance. It represents a company's profitability. However, earnings figure is only useful when it is benchmarked against certain measures. For instance, a comparison among quarterly or annual earnings over time. In such a time series comparison, an important indicator of quality of earnings is measured by its volatility. The management, shareholders, potential investors or finance analysts are using the information concerning earnings volatility for prediction and decision-making. As the firms are exposing to various kind of risks, their earnings are quite volatile. In addition, earnings often acts as the driver of stock performance, unstable earnings performance indicates a bad sign to shareholders and investor who prefer stable earnings. Therefore, the top management of the firms may decide to engage with the use of financial derivatives to mitigate their business risk (Alkebäck, Hagelin, & Pramborg, 2006) with the hope to reduce earnings volatility of the firms given that firms showing volatile earnings are generally viewed as not sending good indicator to the markets.

1.1 Problem Statement

In the regular course of business operations, organization are exposed to various types of market risk such as interest rate risk, foreign exchange risk, commodity price risk and others. These types of risk will affect the volatility of earnings. Earnings might go up and down easily. Hence, most companies who wish to ensure against certain types of business risks will use derivative contracts to mitigate their risk and to minimise earnings and cash outflow fluctuation. (Tai-Yuen Hon, 2012, El-masry, 2006 and Fernando, 2006). Contemporary, in this turbulent business environment, there are several big companies worldwide such as AIG, Lehman Brothers, Air Products & Chemical, Gibson Greetings, and Long-Term Capital Management that had suffered substantial losses in derivative markets. (Adopted from Business Insider, The Epic Story of How A "Genius" Hedge Fund Almost Caused A Global Financial Meltdown", July 10, 2014 & The New York Times). This suggests that in some circumstances, the use of financial derivatives may not necessary eliminate the risk in earnings and cash outflows fluctuation, instead, it may cause the firms' earnings and cash outflow to become more volatile when the firms' financial derivatives do not work efficiently. Hence, this study would like to gain further insights into the earnings volatility of the firms in the contexts of an emerging market from the perspective of the usage of derivatives.

Apart from the use of derivatives may affect earnings volatility, directors' remuneration will affect the firm performance if the remuneration is based on firm performance which means that the top management's wealth is related to the firms' earnings. In order for them to secure their lucrative remuneration package, the top management will always try to stabilise the earnings. This is because if the companies' earnings fluctuate vigorously, the top management will be questioned by the shareholders. Therefore, the top management intend to smooth earnings rather than showing the firms' earnings is volatile as it indicates the firms' performance is vulnerable. A few studies had evidenced that directors' remuneration will affect firm performance positively. (Herdan & Szczepańska, 2011) Since empirical evidence showed that directors' remuneration will affect the firm performance, it indicates that director remuneration can affect the firm performance and indirectly reflect through earnings volatility. In this attempt, we would also like to examine the relationship between directors' remuneration and earnings volatility.

In Malaysia, board independence plays a crucial role in governing listed companies in Malaysia Stock Exchange. As it is required by Malaysian Code on Corporate Governance 2012 (MCCG 2012), the board must achieve at least 1/3 of independent directors in the board. The purpose of setting this requirement is to ensure the independency of the board in protecting stakeholders' interest. Independent directors have to contribute their leadership and strategic guidance, objective judgement, independent of management to the companies and exercises control over the company. Independent directors are not involved in day to day operation, however, they are responsible to monitor and scrutinize top management's decision on behalf of the shareholders. Therefore, prior studies found that board independence affects the firm performance. (Rashid, Zoysa, Lodh, & Rudkin, 2010, Christine, n.d., Ahmadu U. Sanda, Tukur Garba, 2011). When the board independence directly affects firm performance, which suggests that it will also affect earnings volatility. Therefore, in this study, we examine the relationship between board independence and earnings volatility.

1.2 Research Questions

Based on the problem statement, the research questions of this study are:

- What is the extent of usage of financial derivatives among the largest companies in emerging market like Malaysia?
- Does the use of financial derivatives affect earnings volatility?
- Does the director remuneration affect earnings volatility?
- Does the board independent affect earnings volatility?

1.3 Research Objectives

The purpose of this study is to investigate the top 100 Malaysian non-financial firms' use of derivatives in 2015. Anecdotal evidence suggests that financial derivatives are not widely used in emerging markets like Malaysia. Thus, this paper aims at providing evidence on what is the tendency of Malaysian companies in using derivatives as risk management tool. As financial derivatives are used as a risk management tool, it can directly reflect on the companies' earnings and cash flows. Therefore, in this study, we examine the effect of using financial derivatives, director remuneration and board independence on earnings volatility.

2. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 The usage of Financial Derivatives

The derivatives market has grown and morphed significantly throughout the early 21st century. In line with one of the articles in Malaysian Reserve dated on March 2017, the size of the market has grown at an unprecedented pace in Malaysia. It is very common that firms will use financial instruments like derivatives to mitigate their risk. As noted, in this turbulent business environment, organizations face substantial financial uncertainties. All these financial uncertainties unveil them to unexpected losses. All these risks will directly affect the organization's cash flows and earnings volatility. In response to this, several studies show that the use of derivatives as a tool for corporate risk management has increased drastically. In Alkeböck et al. (2006), they found that there is an increase in the usage of derivatives among Swedish companies as compared to prior researchers' who studied in Sweden context. The study showed that the percentage of firms that use derivatives has increased significantly among small and medium companies. While, for large companies, the increase in derivatives usage is not statistically significant. Their study also reveals that non-financial firms in Sweden primarily using derivatives to manage foreign exchange exposures, interest rate exposure, commodity exposure, and equity risk exposure. They proved that around 90% of the firms use derivatives to manage their foreign exchange exposure while 47% manage their interest rate exposure. In the study of Jalilvand, Switzer, & Tang (2000) and El-Masry (2006), their results proved that the majority of derivatives users stated that the most important objectives for using derivatives were managing the volatility of cash flows and earnings and reducing the cost of funds. Based on the above discussion, the following hypothesis is proposed:

H₁: There is a negative relationship between the usage of financial derivatives and earnings volatility.

2.2 Directors' Remuneration

The top management of the firms can be rewarded in many forms. For instance, they will receive basic salary, bonus, employee share option, pension contribution plan, benefit in kind and others. In order to ensure that the directors are acting their fiduciary duty ultimately for the shareholders' interest, the firms will design the directors' remuneration based on the firm performance. As doing in this way, this will reduce agency problem and align the directors' goals with shareholders' goals. By setting the directors remuneration based on the firm performance which mean directors' wealth are depending on firm performance as well (Wallsten, 2000). So, it will mitigate the probability of the directors in committing action which are detrimental to the firm performance. Mehran (1995) found that the level of compensation motivates managers to increase firm value. He also documented that firm performance is positively related to the percentage of equity held by managers and to the percentage of their compensation that is equity-based. In addition, several studies also showed a positive and significant relationship between the directors' remuneration compensation packages and firm performance. (Yatim, 2013), (Kato & Kubo, 2006), (Herdan & Szczepańska, 2011) In contrast, some studies concluded that there is no relationship between the directors' remuneration and firm performance (Jaafar, Abdul Wahab, & James, 2012). Since most of the studies showed that directors' remuneration affects the firm performance, we extend the work by examining the relationship between directors' remuneration and earnings volatility. So, we formulate the hypothesis as follows:

H₂: There is a negative relationship between directors' remuneration and earnings volatility.

2.3 Board Independence

The board of directors is a group of people who are appointed by the shareholders to act in the best interest of the shareholders. The board of directors consists of executive directors and non-executive directors. Executive directors are the persons who involve in firms' daily operation while non-executive directors are the ones who were appointed by the shareholders to represent them to monitor the top management in the firms. In order to ensure the board is functioning effectively, the non-executive directors must be independent, only then they will be able to exercise their right in providing unbiased judgement on top management's decision. There are several

empirical findings showed that board independence has a positive association with firm performance. This includes, Christine (n.d.) who presented evidence that greater representation on the boards of public traded firms by outside directors positively related to firm performance. Bermig & Frick (2010) also documented a significant positive influence of board size on Tobin Q among German companies. On the other hand, a study by Shakir (2008) noted that small board with lesser number of outside directors but with more executive working directors is preferred as they perceived that outside directors may not understand their nature of business and provide wrong judgement. Besides, in the context of Bangladesh, Rashid et al., (2010) reveal that there is no significant relationship between board composition in the form of representation of outside independent directors and firm performance. In other words, it implies that the presence of independent directors does not add value to the firms. Since, there are more studies inclined towards board independence affecting the firms' performance, we test the relationship between board independence and earnings volatility. Thus, it is hypothesized that:

H₃: There is a positive relationship between board independence and earnings volatility.

3. RESEARCH METHODS

The sample of this study consists of the largest 100 listed companies from Bursa Malaysia for the year 2015. By excluding those companies with incomplete data, we only select the largest 100 listed companies based on the market capitalisation as the sample of the present study. Several empirical studies had proven that larger firms are more likely to use derivatives as compared to smaller firms (Alkeback, Hagelin, & Pramborg, 2006), Tai-Yuen Hon, 2012, El-masry, 2006). Besides, we also excluded financial and REITS companies in this study as mostly all the financial companies are the financial derivatives providers. Therefore, as the financial derivatives providers, their purposes are not solely for risk management. In fact, they might be using derivatives instrument as a tool to speculate or gain profits from trading the derivatives instruments.

Data on the usage of derivatives, directors' remuneration and board independence were manually collected from companies' annual report which were downloaded from the Bursa Malaysia's website. While, the data on firm size, debt ratio and growth were extracted from Thomson Reuters Datastream database.

3.1 Research Model

In this study, we intend to gain further insights into the relationship between the usage of financial derivatives and earnings volatility. We developed a multi regression model to examine the effects of the usage of financial derivatives, directors' remuneration and board independence on earnings volatility. The equation of the research model is given below:

$$EV_i = \alpha + \beta_1 FD2015_i + \beta_2 DirR_i + \beta_3 BInd_i + \beta_4 TA_i + \beta_5 DebtRatio_i + \beta_6 Firmgrowth_i + \epsilon_i \quad (1)$$

where,

EV = Earnings volatility, measured as the standard deviation of earnings and net cash flows from operating activities for the most recent five years (From year 2011-2015)

FD2015 = Usage of derivatives, a dummy variable, 1 denotes users of derivatives and 0 otherwise

DirR = The logarithm of directors' remuneration

BInd = The ratio of independent directors on the board

TA = The logarithm of total assets

DebtRatio = The ratio of total liabilities to total assets

Firmgrowth = The ratio of market value of equity to book value of equity, a proxy for growth opportunities

ϵ_i = Error term

In this study, the control variables are firm size (TA), debt ratio and growth opportunities (Firmgrowth) measured as the ratio of market value of equity to book value of equity.

4. RESULTS AND DISCUSSION

Table 1 represents the descriptive statistics of the variables. From Table 1, Panel A, the results show that 54% of the top 100 Malaysian listed companies use derivatives. This showed that the usage of derivatives in Malaysia is not very common. While, out of the top 100 listed companies, around 46 companies or 46% of firms are not using derivatives instrument. On the other hand, from Table 1, Panel B, the mean and standard deviation for the earnings volatility is 4.39 and 14.86. The minimum value of the earnings volatility only 18% while the maximum of the earnings volatility can go up to more than 100%. It indicates the gap of earnings volatility is very large. Panel B also exhibits that the independent directors occupied a minimum of 30% and maximum of 75% seats in the board respectively. This shows that the top 100 listed companies fulfil the requirement of

Malaysian Code on Corporate Governance 2012 (MCCG 2012), the board must achieve at least 1/3 of independent directors in the board. In addition, the directors' remuneration is widely dispersed in the sample.

Table 1. Descriptive Statistics

Panel A					
Usage of derivatives	Freq.	Percent	Cum.		
Derivatives non-users	46	46.00	46.00		
Derivatives users	54	54.00	100.00		
Total	100	100.00			
Panel B					
Variable	Obs	Mean	Std. Dev.	Min	Max
Earnings Volatility	100	4.392081	14.8579	.1797339	113.6501
Board Independence	100	.4664507	.120316	.3	.75
Directors Remuneration (RM)	100	13118703.33	24455327.96	63000	173300000
Firm Size (Total Assets)(RM)	100	11682566.90	18626089.52	189186	117111900
Debt Ratio	100	.2494122	.1696479	0	.6156414
Growth Opportunities	100	3.9971	10.10317	.27	92.37

The highest directors' remuneration can go up to RM 173,300,000 while the lowest director remuneration is around RM63,000. The average and standard deviation of directors' remuneration is RM 13,118,703.33 and RM 24,455,327.96. Firm size (total asset) also like directors' remuneration showed wide dispersion in our sample. The total assets range from a low of RM189,186 to a high of RM 117,111,900. The average total assets was RM 11,682,566.90 and with a standard deviation of RM 18,626,089.52.

Table 2. Correlation coefficients between the dependent variable and independent variables

	EarningVol	FD2015	DirR	Board	FirmSize	DebtRatio	Growth
EarningVol	1.0000						
FD2015	-0.1933	1.0000					
	0.0540						
DirR	0.1122	0.0880	1.0000				
	0.2663	0.3837					
Board	-0.1028	0.1899	-0.1124	1.0000			
	0.3088	0.0584	0.2654				
FirmSize	0.0631	0.2997*	0.3801*	0.0901	1.0000		
	0.5329	0.0024	0.0001	0.3725			
DebtRatio	0.1522	0.2041	0.2967*	-0.0731	0.4705*	1.0000	
	0.1307	0.0417	0.0027	0.4695	0.0000		
Growth	-0.0812	0.1231	-0.3497*	-0.1229	-0.1649	-0.0095	1.0000
	0.4220	0.2225	0.0004	0.2230	0.1011	0.9253	

Correlation shows how the independent variables are correlated. From the Table 2 above, it is apparent that certain independent variables are correlated. It can be observed that the usage of financial derivatives (FD2015) has a positive correlation with firm size which is 0.2997. This indicates that the larger the firm size, the usage of financial derivatives is higher. In addition, the directors' remuneration also correlated with firm size and debt ratio. This showed that firm size and debt ratio have positive correlation with directors' remuneration. Besides, growth opportunities have a negative correlation with directors' remuneration and debt ratio and firm size also positively correlated. However, all the correlated variables do not exceed correlation values of 0.80. So, all the independent variables can be adopted into the research model. Table 2 shows that the independent variables are not highly correlated in this study.

Table 3. Autocorrelation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.291 ^a	.085	.026	14.66576	2.018

To test the autocorrelation, Durbin-Watson (DW) test is used in this study. The result was shown in Table 3. From the Table 3, the Durbin-Watson statistic is reported as 2.018 which approximately equal to 2. The value is between 1.4 and 2.6. Thus, autocorrelation is not a serious problem in this study.

The results of hypotheses testing are presented in Table 4. The results indicate that the overall model is not significant with a low R square value. However, as the purpose of this study is to examine the relationship between the proposed independent variables (i.e. earnings volatility, directors' remuneration and board independence) and earnings volatility, we will focus on the coefficients of the individual variables to answer our research questions. The findings reveal that the usage of financial derivatives has a significant relationship with earnings volatility. P-value for the usage of financial derivatives is 0.038. so, it can be concluded that the usage of derivatives is statistically significant with earnings volatility as the p-value are lower than significance level which is 0.05. Meanwhile, the beta for standard coefficients indicates how the independent variables influence the dependent variables. In this study, the usage of financial derivatives is negatively related to the earnings

volatility. This implies that higher usage of financial derivatives is associated with lower earnings volatility. The result was aligned with the predicted sign stated in hypothesis 1. Hence, hypothesis 1 is supported. On the contrary, the findings do not provide evidence to support the relationship between directors' remuneration, board independence and earnings volatility as their P-values are more than 0.05. Hence, hypotheses 2 and 3 were not supported.

Table 4. Multiple Regression Results on the usage of derivatives and earnings volatility

Source	SS	df	MS	Number of obs = 100		
Model	1852.12057	6	308.686761	F(6, 93) = 1.44		
Residual	20002.8528	93	215.084439	Prob > F = 0.2096		
Total	21854.9734	99	220.757307	R-squared = 0.0847		
				Adj R-squared = 0.0257		
				Root MSE = 14.666		
EarningVol	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
FD2015	-6.761356	3.218184	-2.10	0.038	-13.15203	-3.706805
Board	-5.987917	12.99712	-0.46	0.646	-31.79763	19.8218
DirR	1.417516	3.056877	0.46	0.644	-4.652836	7.487868
FirmSize	.8627077	3.217672	0.27	0.789	-5.526952	7.252367
DebtRatio	14.29858	10.11067	1.41	0.161	-5.779197	34.37636
Growth	-.0487337	.1628238	-0.30	0.765	-.3720695	.2746022
cons	-7.926398	26.06164	-0.30	0.762	-59.67965	43.82685

On the other hand, the results on the control variables, firm size, debt ratio and growth opportunities showed that the P-values are more than 0.05 which evidenced that the control variables have no significant relationship with earnings volatility.

Our empirical results showed that the usage of derivatives has a significant relationship with earnings volatility. This result is in line with prior researchers like (Alkeback et al., 2006), (Jalilvand et al., 2000) and (El-Masry, 2006) who found that the use of financial derivatives will directly affect the earnings volatility. Our result documented that the use of financial derivatives is negatively affecting the earnings volatility. (Tai-Yuen Hon, 2012) Indeed, the result supports theory of risk management. From the risk management perspectives, the usage of derivatives is treated as a tool to mitigate the firms' earnings volatility. As we know that nowadays, businesses are exposing to various types of risk such as foreign exchange risk, interest rate risk, commodity risk and others. The organization wishes to reduce their business risk and entering into derivative contract which will directly stabilise earnings volatility.

The results of this study contribute empirical evidence for an emerging country to show the extent of the firms in emerging markets in engaging themselves in the usage of derivatives. Besides, the result also provides evidence to extend the literature on the use of financial derivatives and earnings volatility. It also gives an insight to the top management in the firms to apply derivatives instrument in their firms. Future research can involve all listed companies in the main board on Bursa Malaysia to increase the sample size of the study in order to generalise the results to companies of smaller size as well. In addition, longitudinal data could be studied to have better understanding on how the usage of derivative affected earnings volatility.

5. CONCLUSION

This paper studies the effect of the usage of financial derivatives on earnings volatility. We also examine the relationship between directors' remuneration, board independence and earnings volatility. By using the top 100 non-financial listed companies in Malaysia, the results evidenced that the usage of derivatives is negatively related to earnings volatility. It implies that higher usage of derivatives will reduce the firms' earnings volatility. In addition, the results documented that directors' remuneration, board independence has no significant relationship with earnings volatility. Hence, we concluded that the usage of derivatives is a good risk management tool in mitigating business risk to stabilise the firms' earnings.

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