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GROWTH OPPORTUNITIES, MODERATOR AND CORPORATE DIVERSIFICATION

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Abstract: Growth opportunities are normally adapted to expand firm's business operations through corporate diversification. Growth opportunities are closely influenced the corporate diversification in the business. Majority of the research does not explain growth opportunities but rather takes it as a control variable and did not examine its consequences. The research provides answers to close the literature gap by looking at moderating effect of growth opportunities on corporate diversification and firm financial performance by using market data from Emerging market. The researcher used a sample of Malaysia publicly listed companies due to the market condition in Malaysia being similar to other emerging market in Asian. The study used System Generalized Method of Moments (GMM) and total sample 423 firms and 2538 observation have been selected for the period of 6 years from 2007 to 2012. The empirical findings demonstrated that growth opportunity does bring a positive effect to firm financial performance and significant at 1% level. However, when growth opportunity become a moderator, it will bring a negative effect on corporate diversification and firm financial performance and significant at 5% level. The more the firm has the growth opportunity, the more the firm will do corporate diversification. In the end, this causes the negative effect on firm financial performance. On the other hand, the researcher did not find any evidence of the quadratic effect of corporate diversification curve. As per control variables, size of the firm has negative coefficients with significant at 1% level. However, the crisis does bring positive effect on the firm financial performance with 5% significant level. However debt ratio and market capital with both are not significant at 10% level. There is not enough evidence to explain any relationship among debt ratio, market capital and firm financial performance in these contexts.

1. INTRODUCTION

Growth opportunities are normally adapted to expand firm's business operations through market, products, and services in order to improve firm's performance. A growth opportunity normally allows organizations to expand in current operations or venture into different areas from the current operations. When the organization expands its business to the existing lines of business, it is called related diversification; the opposite is called unrelated diversification.

In many cases, firm growth is considered as a key indicator for the success of a firm's performance. Firm growth seems to have a positive implication on the survival probability of companies. Braunerhjelm, P., Acs, Z. J., Audretsch, D. B., & Carlsson, B. (2010). The growth of firms is associated with a wide variety of potential benefits and positive implications for a firm's performance level among academics. Audretsch, D. B., Coad, A., & Segarra, A. (2014).

The nature of firm growth is a heterogeneous, complex and dynamic process that involves economic, social and cultural factors (Delmar, F., Davidsson, P., & Gartner, W. 2003; Deschryvere, M. 2014). One way firms can create and capture value is through growth. This means that firms must make decisions regarding the growth opportunities. Even the impact of growth

opportunities on firm performance has been recognised vital since Miller and Modigliani (1961), but relatively less extension on the work has been carried out on the measurement of the firm growth opportunities effect to corporate diversification.

Growth opportunities of the firms have attracted investors, public and scholarly attention as they represent the key factors for diversification and firm financial performance. (Foster, L., Haltiwanger, J., & Krizan, C. J. 2006) and job creation (e.g., Haltiwanger, J.C., Jarmin, R.S., & Miranda, J. 2013). However, the firm growth opportunities and effect to corporate diversification still lack a clear understanding of the patterns to follow. The researcher has argued that to a large extent, it is the research focusing on the growth opportunities that has revealed that firms use different corporate diversification modes to grow the firms.

The researcher feels that in order to close the literature gap in growth theory by Penrose (1959) corporate diversified strategies need to include the effect of growth theory. Growth opportunities are closely influenced by the related and unrelated corporate diversification in the business. Majority of the research does not explain growth opportunities but rather takes it as a control variable and did not examine its consequences. Growth opportunities (GOPP) are measured as changes in annual sales (in percentage). Growth opportunities are the Capital expenditures/total sales.

Previous research did not fully clarify the relationship between growth opportunities and corporate diversification strategies relationship. Previous studies usually partially analyse the relationship between the growth opportunities and firm performance. (Chatterjee and Singh, 1999; Lamont and Anderson, 1985). The researchers would like to include the moderating effect of growth opportunities into the model to measure the interaction term between corporate diversification and firm financial performance.

2. CONCEPTUAL DEVELOPMENT AND RESEARCH HYPOTHESES

According to Bernardo, A. E., & Chowdhry, B. (2002) based on firms from 1958 to 1988 in US, they found out young firms specialize because of absentgrowth opportunities. It might not be worthwhile for them to undertake additional new investment even after considering the value of information. Firms will differentially value the information generated by the outcomes of their investments, they will consider starting doing diversification when they have more growth opportunity. Danbolt, Hirst, and Jones, E. (2002) using the data of 278 large UK companies from 1987 to 1995 found out that the market value of the firm or firm financial performance is influenced by the growth opportunities of the firms.

Ferris, S.P., Sen, N., Lim, C.Y. and Yeo, G., (2002), found that growth opportunities accounted for some parts of the corporate diversification discounts based on the 121 different Singapore firms focus-increasing or -decreasing (diversifying) in the Stock Exchange of Singapore (SES) listed firms and foreign companies during the period 1987–1996.John D. Stowe and Xuejing Xing (2006) used 230 diversifying firms from 1981 to 1997, found that on average, diversifying firm's performance was better than non-diversified firms. The researchers also found out that growth opportunities are different on each firm and may influence the strategies of corporate diversification.

Choi, Y. R., Zahra, S. A., Yoshikawa, T., & Han, B. H. (2015) did a research study that focuses on family-controlled manufacturing companies in Korea from 1998 to 2007. The data was collected from the Korea Investors Service database, which contains company profiles, ownership information, and financial data for all publicly listed Korean firms. The research reported that family ownership encourages growth opportunities, as family owners who own a larger share of their firms have greater motivation to achieve growth and protect their family control goals with diversification strategies to grow the business always a priority to the firm. Choi, Y. R., et al. (2015) also said that family firms making insufficient R&D investments to push the firm to the next level did not exploit growth opportunities available in the firm well.

According to Mackey, T. B., Barney, J. B., & Dotson, J. P. (2017) the new business model in the corporate created the firm growth opportunities with this growth opportunities firm diversified. De Andrés, P., De la

Fuente, G., & Velasco, P. (2017) used 3,558 US firms during the period of 1998–2014 to measure the real options approach of the diversification strategies. De Andres *et al.* (2017) research found that as a firm's diversification strategy is based on a growth opportunity, it becomes more value-enhancing to the firm performance.

Hypothesis 1. Growth opportunities have a positive to firm financial performance.

Hypothesis 2. Growth opportunities have a negative moderating effect on corporate diversification and firm financial performance.

2.1. Quadratic Effect of Corporate Diversification and Firm's Performance

According to Wernerfelt and Montgomery's (1988) corporate diversification may have a quadratic effect on firm financial performance. The firms will start investing their excess resources to existing industries and further expand in the similar product line or related business. The initial investment will bring a positive effect to firm financial performance; however, until a certain point, the quadratic effect will happen. The positive effect on firm performance will diminish after a certain point like the quadratic.

As the firm keeps on diversifying, the existing competencies will become weak and slowly become a burden to the firm. The firm loses the competencies even though it has excess resources and cannot gain competitive advantage. Further diversification will slowly drop the firm profit and bring negative performance to the firm. However, the positive effect to the negative effect may depend on how aggressive the firm diversified. The result further supported by scholar Markides (1992) that corporate diversification slowly will move away from the firm core competencies and competitive advantage to green areas at the same time benefits of corporate diversification will reduce and turn to negative.

Markides (1992) also mentions that the marginal utility concept benefits apply closely with corporate diversification. All strategies that firms apply also have their limit due to the scarcity of resources in the firm. Diversification strategies will also have the decreasing function. Initial state will see profit from corporate diversification beyond the optimum level of the firm, but the profit will turn to negative. According to Markides (1992), it is very hard to say either related diversification or unrelated diversification is the best strategy. It all depends on the degree of diversification and internal capability of the management skills and corporate diversification itself whether they have a quadratic effect. As a result, a further measurement is needed to carry out in this study to find out any quadratic effect in the model. As a result, the researcher would like to introduce the quadratic effect of corporate diversification model.

The quadratic effect is measured by the squared term of Entropy Index. If the squared term of entropy index and entropy index have a different direction, it means the quadratic effect does happen in corporate diversification. The researcher would like to see the effect of quadratic in the research.

Hypothesis 3. Growth opportunities have a negative moderating effect to the quadratic curve of corporate diversification and firm performance.

3. METHODS AND MEASURES

The population of the research consisted of all the public listed companies (PLC) listed on Bursa Malaysia from 2007 to 2012 excluding all the banking industries and incomplete data. The researcher uses a sample of Malaysia publicly listed companies due to the market condition in Malaysia being similar to other emerging market in Asian.

During this period of the sampling from 2007 to 2012, the firm must not have major changes such as a merger or be delisted. The revenue of each segment was identified on the basis of calculating entropy index for corporate diversification from each of the company's annual reports. With the new segmentation reporting ruling that implements on the year 2007, under FRS 8 Operating Segments ruling (Malaysian Accounting Standards Board [MASB], 2014; Malaysian Institute of Accountants [MIA], 2010) the research was able to get the detail of each of the business units that contributed to the firm performance. In this section, the study identifies appropriate measurements of the degree of diversification and firm performance. The business

segment revenue for each firm was collected from published reports provided by Bursa Malaysia by using the hand-picked data method.

The research using the six years data start from 2007 to 2012 and takes into account the global crisis. The choice of this time period considers the global crisis and new conditions of the environment in which firms have operated over the last decade and, hence, the strategic changes that they have made with the aim of adapting to such conditions. The sample used was consistent with others scholar studies such as Singh, Davidson, & Suchard (2003) and Afza *et al.* (2008). In order to study the financial statement, the firm must base the study on six years' financial data then the research result will be more reliable. Selection of six years data was also inspired by the conversion of business segments reporting standard from FRS 114 to FRS 8 that was only just introduced in the year 2018.

The study is using System Generalized Method of Moments (GMM). ROA ratios are used as dependent variables for the results of Model 1 and Model 2. System GMM is the main estimation. System GMM combines equations in levels and equations in first difference to estimate the parameters. In other words, System GMM uses more information to estimate the parameters. In addition, it is proven to be one of the best methods to estimate dynamic panel models in the presence of firm-specific effects and endogeneity of some explanatory variables.

3.1. Measurement of Degree of Diversification

Diversification measurement initially just divides by numbers of segments in the business units that the firm has ventured into to draw the basic conceptual as well as methodological of diversification. However, the researcher recognized that based on the number of segments to measure diversification is an imperfect measure of diversification as it weights large and small segments equally and also did not take into consideration of the revenue generated by the segment. This equal-weighting may introduce noise to corporate diversification measurement.

The degree of corporate diversification measure how each of the business units have been diversified based on the revenue contributed by each business unit to total firm revenue. Contrarily, type of diversification refers to the type of corporate diversification strategy and involves some kind of element of assessing the relatedness or similarity between the businesses segment. The degree of corporate diversification also refers to diversification or diversity per se, i.e. without further specifying this diversity, while the type of diversification (also) refers to the logic of business product line linkage into portfolios of the business whether related or unrelated with the firm existing business line.

Ranka Krivokapic, Vladimir Njegomir & Dragan Stojic (2017) used entropy to measure the corporate diversification in insurance industries of The Republic of Serbia. In Malaysia, Ooi, C. A., Hooy, C. W., & Som, A. P. M. (2014) used entropy to measure the corporate diversification in the hotel industry and Doaei, M., Ahmad Anuar, M., & Ismail, Z. (2014) used entropy to test on manufacture firm.

The total entropy index measure applied in this study is stated below:

$$E = \sum_{i=1}^{n} P_{iis} \ln(1/p);\ 0 < H \leq 1$$

Where, P_{iis} is the revenue contributed by each business unit or segment by percentage and n measures how many numbers of business units or segment in the particular firm. ln(1/Pi) is the weight of each business unit within the same two-digit industry code. Entropy is able to consider both the revenue contributed by each segment and number of segments in which a firm operates and also how relatively import these entire segments are to the firm. The Entropy Index represents how the firm diversified; the Entropy Index high means the degree of corporate diversification is also high. The higher the degree of corporate diversification means the firm is more diversified.

When Entropy Index is 0, it represents the firm is a non-diversified firm. The higher the values of the entropy index, the higher the degrees of diversification. For example, if a firm has only one business unit, the entropy index provides the value of 0. If the firm (A) diversification goes on to two business units and generates the same revenue of 50% each of the business units, the

index provides the value of 0.69. If the firm (B) diversification is two business units but the revenue weight is 0.7 and 0.3, then the entropy index provided is 0.61. This clearly shows that Firm (A) is more diversified than Firm (B) although both of them diversified into two business units. Therefore, by using the modified Entropy Index, we are able to capture the degree of diversification of the firm.

Firm diversification is not only determined by how many business units or segment units of the firm there are. Previous research on diversification always used business units to determine diversification, but it does not measure the degree of diversification. The researcher would like to cover this research gap by introducing Entropy Index that is slightly modified to measure the degree of corporate diversification in the firm. Below table 3.1 showed the detail of business units did not equal the degree of diversification.

Table 3.1
Diversification and Entropy Index

Type of Firm	*# BU1*	*BU1*	*BU2*	*BU3*	*BU4*	*EI*
Firm SB	1	1				0
Firm W	2	0.9	0.1			0.3251
Firm X	2	0.7	0.3			0.6109
Firm Y	2	0.5	0.5			0.6931
Firm Z	4	0.9	0.05	0.025	0.025	0.4291

Note: #BU = Number of Business units.
BUI = Business Unit One.
BU2 = Business Unit Two
BU3 = Business Unit Three
BU4 = Business Unit Four
Firm SB = Single Business Firm or Non Diversification Firm
Firm Y – Firm diversification equally 0.5 and 0,5 into two business units.
Firm X = Firm diversification more in BUI 70% than BU2 30%
Firm W = Firm diversification more in BUI 90% than BU2 10%

Referring to Table 1, BU = how many business units a firm has. 1BU = one business unit, 2BU= two business units. The figure under BU is the percentage revenue contributed by the business unit to the firm.

Business units cannot determine the degree of diversification. For example, refer to Table 1, firm W, X, and Y, although they are all the same, diversify into two business units, however in terms of degree of diversification they are not the same. Entropy Index is used to determine the degree of diversification. For example, based on Entropy Index W is 0.3251, X is 0.6109 and Y is 0.6931. The higher the Entropy Index the more diversified the firm is.

In this example Firm Y is more diversified than firm X, and firm X is more diversified than firm W. Another example: firm Z is diversified into four business units, and Y is diversified into two business units. Although firm Y only diversifies into two business units, it is considered more diversified compared to firm Z. If only based on a business unit to determine how the firm diversifies, the result will be firm Z with four business units. However, firm Y is more diversified based on an Entropy Index of 0.6931 which is higher than Firm Z at 0.4291.

3.2. Measurement Firm Performance

Return on Asset (ROA) is the accounting measures widely used in the financial field. (Qian & Li, 2002, Aras, G., Aybars, A., & Kutlu, O. (2010). This is due to accounting ratio measurements being more sensitive to the firm performance. In emerging markets like Malaysia, listed firms are not many and more reliable sources of data are from the audited financial statement; as a result, if researchers want to evaluate the firm performance, it is better to use ROA then stock prices.

ROA is one of the common ratios that can be used to eliminate the effect of variation of the stock market and different years. The efficiency of the company produces its output be able to measure by ROA. ROA is commonly used by finance scholars and accepted among scholars to measure the firm financial performance. (Kim, Hwang, & Burgers, 1989). (Gomez-Mejia & Palich, 1997).

As accounting measures are widely applied in the field, using accounting measures in this study will enable the study to be compared to a wide array of extension studies. Several studies in financial economics analysed the firm performance of sample firms by comparing

either the percentage changes in operating income or the percentage changes in ROA (or, in some cases return on sales) to an appropriate benchmark - usually the median percentage change in performance for other firms in the same industry (Kaplan, 1989; Lehn, Netter, & Poulsen, 1990; Denis & Diane, 1993; Jain & Kini, 1994; Denis& Diane, 1995; Barber& Lyon, 1996).

3.3. Measurement Quadratic Effect of Corporate Diversification and Firm's Performance

According to Wernerfelt and Montgomery's (1988) corporate diversification may have a quadratic effect on firm financial performance. The firms will start investing their excess resources to existing industries and further expand in the similar product line or related business. The initial investment will bring a positive effect to firm financial performance; however, until a certain point, the quadratic effect will happen. The positive effect on firm performance will diminish after a certain point like the quadratic.

As the firm keeps on diversifying, the existing competencies will become weak and slowly become a burden to the firm. The firm loses the competencies even though it has excess resources and cannot gain competitive advantage. Further diversification will slowly drop the firm profit and bring negative performance to the firm. However, the positive effect to the negative effect may depend on how aggressive the firm diversified. The result further supported by scholar Markides (1992) that corporate diversification slowly will move away from the firm core competencies and competitive advantage to green areas at the same time benefits of corporate diversification will reduce and turn to negative.

Markides (1992) also mentions that the marginal utility concept benefits apply closely with corporate diversification. All strategies that firms apply also have their limit due to a scarcity of resources in the firm. Diversification strategies will also have a decreasing function. Initial state will see profit from corporate diversification beyond the optimum level of the firm, but the profit will turn to negative. According to Markides (1992), it is very hard to say either related diversification or unrelated diversification is the best strategy. It all depends on the degree of diversification and internal capability of the management skills and corporate diversification itself whether they have a quadratic effect. As a result, further measurement is needed to carry out in this study to find out any quadratic effect in the model. As a result, the researcher would like to introduce the quadratic effect of corporate diversification model.

The quadratic effect is measured by the squared term of Entropy Index. If the squared term of entropy index and entropy index have a different direction, it means the quadratic effect does happen in corporate diversification. The researcher would like to see the effect of quadratic in the research.

3.4. Measurement of Growth Opportunity (GOPP)

The growth opportunity is one of the vital factors to push diversification and influence the firm financial performance. Without growth opportunities, firms will not be able to expand, and competing firms will overtake the firm. This variable is measured by the average variation of the revenue on the reporting period. Investigating the role of diversification in the firm growth process. Growth theory of the firm hypotheses about the growth of employment, assets and sales in the years before, during and after a new product introduction and Oberhofer, H., & Pfaffermayr, M. (2013).

3.5. Moderating Effect

The researchers also include the moderating effect of growth opportunities into the model to measure the interaction term. The interaction term such as growth opportunities and diversification (GOpp*EI) moderated the corporate diversification and firm financial performance. Significant relationships found in the interaction terms imply that ownership has a significant moderate relationship between diversification and firm performance. The researcher expected negative moderating effects to occur between ownership and performance, however, positive effects were reported for free cash flow and growth opportunities.

3.6. Control Variables

According to prior research, control variables known to affect corporate diversification and firm financial

performance are asset and debt ratio and market capital. Size of the firms has positively influenced the profitability of the firms. Compared with smaller firms, larger companies tend to exploit economies of scale and have better abilities to use technology. They can also achieve better product diversification and larger market shares.

In order for firms to grant better access to finance, firm size is positively related to the firms. (Majumdar& Chhibber, 1999; Jermias, 2008). However, Sarkar & Sarkar (2000) found out that companies with larger sizes tend to be less effective in terms of operational efficiency than smaller size firms due to the span of control and mismanagement by top management.

Lang and Shulz (1994) propose that as a company size turns to a larger size the corporate diversification will decrease the firm financial performance. In order to control the size effect, companies must logarithmically transform the total assets being used. The reason why the researchers took the natural logarithm is to reduce the probability that extreme observations would bias our findings.

Ito (1997) also found that size of the firm had a positive effect on firm profitability. The larger the size of the firms the more goodwill persisted by the market and the easier the firm captured the customer and gained a competitive advantage over the other firms. In the end, the firms will be able to perform better. According to Zeitun, R., & Tian, G. (2014) the firm's size directly influences a firm's performance in the positive because size reflects a firm's capabilities and abilities to handle the market. Larger firms are able to raise funds easier compared to small size firms which will affect firm financial performance.

Total assets always used as a proxy for firm size and cost of debt. Large size firms may be able to get cheaper cost of debt compared to small size firms. (Sengupta, 1998). Omar & Simon (2011) used assets as a proxy for the extent of firm diversification which entails more comprehensive information to facilitated managers in decision making and control of operations. Due to firm size, it is highly skewed and may affect correlation with other variables; logarithm transformation was used to reduce the firm's sizes effect. Johnson et al, 1997 supported the firm's size effect and mentioned that firm's size also becomes a competitive position for firms to take advantage of the market.

The second set of control variables that in the industry are the leverage that is measured by debt ratio. Prior researchers have shown that conditions in a firm's debt ratio are negatively correlated to firm financial performance. High firm debt may cause management more difficult to obtain the capital for diversification efficiency. (e.g., Markides, 1992; Ravenscraft &Scherer, 1991).

The third set of control variables is market capitalizing has directly brought positive impact to the firm's performance. Huge market capitalizing builds a good reputation of the firm when diversified to new business areas. Perception of the market is more positive and brings success to the firms. (e.g., Markides, 1992; Ravenscraft & Scherer, 1991). The fourth set of control variables is an economic crisis that happened in 2009. The crisis is an additional control mechanism at an economic structure and has been argued to affect firm performance. The crisis is an additional control mechanism at high stakes. During the crisis, leveraging capital structure has been argued to have a very vital impact on the firm financial performance as a result of the need to control for the crisis. (Hitt & Smart, 1994; Jensen, 1989).

3.7. Model Specification

The study model adapt and adopt Ling-Foon, Chan., Taufiq H.S Chowdhury, Bany–Ariffin A.N,& Annual B. Md. Nasir. (2017) modelto test on growth opportunities and the moderating effect of corporate diversification and firm financial performance as per below:-

Without Measurement of Quadratic Effect of Corporate Diversification

$$ROA_{it} = \beta_{1it} + \beta_{2it}\, EI_{it} + \beta_{3it}\, GOpp_{it} + \beta_{4it}\, GOpp * EI_{it} + \beta_{5it}\, Size_{it} + \beta_{6it}\, MC_{it} + \beta_{7it}\, DR_{it} + \beta_{8it}\, Crisis_{it} + \varepsilon_{it} \quad \text{Model(1)}$$

Measurement Quadratic Effect of Corporate Diversification

$$ROA_{it} = \beta_{1it} + \beta_{2it}\ EI_{it} + \beta_{3it}\ SEI_{it} + \beta_{4it}\ GOpp_{it} + \beta_{5it}\ GOpp * EI_{it} + \beta_{6it}\ Size_{it} + \beta_{7it}\ MC_{it} + \beta_{8it}\ DR_{it} + \beta_{9it}\ Crisis_{it} + \varepsilon_{it}$$

Model(2)

Note:

ROA_{it} = ROA refers to firm financial performance measured.

EI_{it} = Entropy Index to measure corporate diversification.

SEI_{it} = Square Entropy Index to measure quadratic effect of corporate diversification.

GOPPit = Growth opportunities of firm are measured by growth rates of afirm.

*GOPP*EI* = Growth opportunities intercept with diversification to measure any moderating effect of growth opportunities.

$Size_{it}$ = Control variables (size). To control for the size effect on the dependent variables logarithmically transformed of total assets being used.

MC_{it} = Control variables (Market Capital). To control for the market capital effect on the dependent variables.

DR_{it} = Control variables (Debt Ratio). To control for the debt effect on the dependent variables.

$Crisis_{it}$ = Control variables (Crisis). To control for the crisis effect on the dependent variables. Dummy variable equal = 0 (2007 -2009) for before and =1 for after. (2010 -2012).

4. ANALYSIS RESULT

4.1. Descriptive Statistics

Our dataset included 423 firms in Bursa Malaysia, with 2,538 observations and 7 sectors. (Excluding Banking Sector) from 2007 to 2012 by the hand-picked method.

The 423 firms divided as per Table 4.1, construction 36 firms with 216 observation, consumer 100 firms with 600 observation, industry product 43 firms with 258 observation, infrastructure 6 firms with 36 observation, plantation 34 firms with 204 observation, property 73 firms with 438 observation, technology 5 firms with 30 observation, trading and services 126 firms with 756 observation.

Table 4.1
Number of Firm by Type of Industry

Type of Industry	*No of Firm*	*No of Observation*	*%*
Construction	36	216	0.09
Consumer	100	600	0.24
IND-PROD	43	258	0.10
Infrastructure (IPC)	6	36	0.01
Plantation	34	204	0.08
Property	73	438	0.17
Technology	5	30	0.01
TRAD/SERV	126	756	0.30
Total	**423**	**2538**	1.00

Note: IND-PROD = Industry Product
TRAD/SERV = Trading and Service

Prefer to the Table 4.2, the degree of diversification in Malaysian firms based on Entropy Index is 0.6862 this means the Malaysian firms when they do diversification, they do not diversify widely. Even though they venture into diversification strategies, they are much focused on a few businesses only. In other words, they are very dominant diversification. The table clearly showed the diversification firms increased from 269 firms to 276 firms between 6 years. 64 percent of the firms are diversified firms and 36 percent are non-diversified firms.

Table 4.2
Entropy Index

Year	*Entropy*	*Number of Firm*	*%*
2007		**423**	
Non-diversify firm	0.0132	154	0.36
Diversify firm	0.7234	269	0.64
2008		**423**	
Non-diversify firm	0.0171	157	0.37
Diversify firm	0.6924	266	0.63
2009		**423**	

contd. table 4.2

Year	*Entropy*	*Number of Firm*	*%*
Non-diversify firm	0.0145	151	0.36
Diversify firm	0.6805	272	0.64
2010		**423**	
Non-diversify firm	0.0168	147	0.35
Diversify firm	0.6652	276	0.65
2011		**423**	
Non-diversify firm	0.0212	148	0.35
Diversify firm	0.6630	275	0.65
2012		**423**	
Non-diversify firm	0.0207	144	0.34
Diversify firm	0.6936	279	0.66
Average			
Non-diversify firm	0.0172	901	0.36
Diversify firm	0.6862	1637	0.64
Grand Total		**2538**	**1.00**

Notes: ROA_{it}-1 is the ratio of total Return of total assets and is used to measure Firm performance measured. EI is the Entropy Index to measure corporate diversification; the higher the index the more widely diversified the firm is. CRISIS is the control variables (Crisis) to control for the crisis effect on the dependent variables represented by dummy equal = 0 (2007 -2009) for before and =1 for after. (2010 -2012). Size is control variables size, to control for the size effect on the dependent variables we used logarithmically transformed total assets. Used of the natural logarithm is to reduce the probability that extreme observations avoid bias result. MC is a control variable of market capital, used to control for the market capital effect on the dependent variables. DR is a control variable of debt ratio, used to control for the debt effect on the dependent variables. Asterisks indicate significance at 10% (*), 5% (**) and 1% (***). T-statistics of system GMM model are based on Windmeijer-corrected standard errors. 2nd order serial correlation in first difference is distributed as N (0, 1) under the null of no serial correlation in the residuals.

4.2. Moderating effect of Growth Opportunities to Corporate Diversification and Firm Performance

Table 4.3
Corporate Diversification and Firm Performance

Growth Opportunities Moderating Effect to Corporate Diversification	*SYS GMM (without Quadratic SEI)*
	(ROA)
	Model 1
ROA_{it-1}	9.69***
	(0.7983505)
EI	2.33**
	(3.636497)
LOGGOPP	2.57***
	(4.255165)
LOGGOPP*EI	-2.14**
	(-2.550129)
LOGSIZE	-2.68***
	(-0.6829706)
DR	0.60
	(0.225685)
MC	-0.17
	(-6.63e-12)
CRISIS	2.11**
	(0.0887915)
AR(1)	-2.0594**
AR(2)	1.4364
Sargan Test	27.40045**
Observation	696
Instruments	21

Refer to Table 4.3 Entropy Index (EI) with a coefficient of 3.636497 and Z-value of 2.33 is significant at 5% level and positively related to firm performance measured by ROA ratio. Beside that the Growth Opportunities (GOPP) with a coefficient of 4.255165 and Z-value of 2.57 is significant at 1% level and positively related to firm performance measured by ROA ratio. Reject Ho. Growth opportunity has a positive association with firm performance. The results have been supported by many scholars such as Audretsch, D. B., Coad, A., & Segarra, A. (2014). Deschryvere, M. 2014). Choi, Y. R., Zahra, S. A., Yoshikawa, T., & Han, B. H. (2015). De Andrés, P., De la Fuente, G., & Velasco, P. (2017) that growth opportunities versus corporate diversification have direct implications for the firm's financial performance.

Further look at the moderating effect of Growth opportunity with the interaction of -2.550129 and Z-value of -2.14 significant at 5% level. It showed a negative moderating effect of growth opportunities on the relationship of corporate diversification and firm financial performance. The greater the growth opportunities of the firm have may increase the degree of corporate diversification and will bring negative effect to firm financial performance.

The growth opportunities are vital determinants and have moderating effect on corporate diversification and firm performance. Any firm's doing corporate diversification strategies without looking at the growth opportunities are considered to bring negative effect to firm financial performance. According to Holder, M. E., & Zhao, A. (2015) corporate diversification activities are the result of exploring new growth opportunities. Value changes around diversification depend on the growth opportunities and firm operational efficiency. A lot of firms neglect the value of growth potentials in the firm and resulting in over diversification which will negatively impact firm financial performance. The negative firm financial performance may due to lacking management skill or agency issues that cause over-diversified.

However the finding of the study slight difference from Indonesia or Thailand. According to Riswan, R., & Suyono, E., (2016) based on the Indonesia context manager, skill and expertise is limited and not able to manage the diversified firm well. In emerging markets, the majority of the manager's skills are specialized and only focus on the limited industries and may not be able to gain any benefits of over-diversification. As a result, when firms start diversifying, managers will not be able to manage the firm well or mismanagement cause by agency issues start to bring negative firm financial performance. However, in Malaysia situation are a slight difference, Malaysia able to import a lot of expertise from overseas to solve the issues. As a result diversification in Malaysia able to obtain a positive effect on firm financial performance.

Whereas in Thailand market due to agency issues reported by Charoenwong, Charlie and Ding, David K. and Jiraporn, Pornsit, (2011) corporate diversification brings negative effect to firm financial performance. On the hand, Malaysia also faces the similar agency issues however the degree of corporate governance in Malaysia is higher and able to control these agency issues and reduce the impact of corporate diversification.

Refer to table 4.3, control variable, size of the firm has -0.6829706, negative coefficients with Z-value -2.68 significant at 1% level. This showed the size of the firm did affect the firm performance in negative relation. However, the crisis does bring positive effect on the firm performance. The crisis with positive coefficients 0.0887915, Z-value 2.11 is significant at 5% level. This showed crisis does affect the firm performance in the analysis period 2007 to 2012. In other words during crisis period the diversified firm performance better than non-diversified in Malaysia. On the other hand, debt ratio and market capital with positive coefficients 0.225685, Z-value 0.60 and with negative -6.63e-12, Z-value -0.17 both are not significant at 10% level. There is not enough evidence to explain any relationship.

4.3. Moderating effect of Growth Opportunities to Corporate Diversification in Quadratic Curve and Firm Performance.

A further test on the quadratic curve of corporate diversification as below:

Table 4.4
Corporate Diversification and Firm Performance

Growth Opportunities Moderating Effect to Corporate Diversification	*SYS GMM (With Quadratic SEI)*
	(ROA)
	Model 2
ROA_{it-1}	9.73***
	(0.8028532)
EI	2.01**
	(3.301552)
SEI	0.71
	(0.1485946)
LOGGOPP	2.69***
	(4.50345)
LOGGOPP*EI	-218**
	(-2.664081)
LOGSIZE	-2.63***
	(-0.6757703)
DR	0.58
	(0.22237151)
MC	-0.24
	(-9.40e-12)
CRISIS	2.15**
	(.0908619)
AR(1)	-2.062**
AR(2)	1.4359
Sargan Test	27.8388***
Observation	696
Instruments	22

Notes: ROAit-1 is the ratio of total Return of total assets and is used to measure Firm performance measured. EI is the

Entropy Index to measure corporate diversification; the higher the index the more widely diversified the firm is. CRISIS is the control variables (Crisis) to control for the crisis effect on the dependent variables represented by dummy equal = 0 (2007 -2009) for before and =1 for after. (2010 -2012). Size is control variables size, to control for the size effect on the dependent variables we used logarithmically transformed total assets. Used of the natural logarithm is to reduce the probability that extreme observations avoid bias result. MC is a control variable of market capital, used to control for the market capital effect on the dependent variables. DR is a control variable of debt ratio, used to control for the debt effect on the dependent variables. Asterisks indicate significance at 10% (*), 5% (**) and 1% (***). T-statistics of system GMM model are based on Windmeijer-corrected standard errors. 2nd order serial correlation in first difference is distributed as N (0, 1) under the null of no serial correlation in the residuals.

Refer to Table 4.4 The Entropy Index (EI) and squared term of Entropy Index (SEI) both did not have the expected sign, EI with a coefficient of positive 3.301552, Z-value of 2.01 and the other SEI with a coefficient of positive 0.1485946, Z-value of 0.71 and not significant at 10% level. SEI result is not significant and does not have enough evidence to support the quadratic effect of corporate diversification which measures by a squared term of Entropy Index (SEI) and firm's performance measure by (ROA) relationship in this case. This is normal in emerging market due to the age of firm is young and the corporation still in the growth status in the industry. The situation opposite in developed countries due to the firm age much old and the majority of the corporation are in the maturity status.

5. CONCLUSION AND IMPLICATIONS

The researcher result can give vital information to business perspective and government agency. It is an important decision to business perspective and government agency on manage the corporate diversification. Focusing on research and development on the existing product line is easy to gain the positive profit then start a new business. It is not necessary to diversify to gain market shares if the existing business has growth opportunities. However, the researcher observes that the majority of the firm diversification is due to the growth Opportunities. Growth Opportunities become a moderator of corporate diversification. The study evidence strongly suggested that the moderation effect of growth opportunities have a negative effect on the corporate diversification. Even those growth opportunities directly bring profit to the firm financial performance. However, growth opportunities will also be moderating the corporate diversification and cause over-diversification. When this happens will bring negative effect to firm financial performance.From a government perspective, focusing on the growth opportunities has a number of implications. The first step is to understand and acknowledge that there are different modes of growth opportunities in the firms and that the societal implications of these modes are different.Second, the government should ensure that policies are in place to encourage and support the growth strategies such as reduce taxes, grant subsidy and support for R&D funding to penetration into global markets. The government should encourage more R&D fund set up to let the firm improve their production and sustain the growth in the industries.

The researcher proposes future research should focus on behaviour of the decision-makers. Future research can be conducted more on behaviour variables into the model to test the effect on diversification and firm performance. The researcher suggests further study on corporate diversification theory on corporate governance mechanisms such as CEO (Chief executive offer), remuneration of CEO, remuneration of the board of director, managerial entrenchment etc. that may cause agency problems on diversification which can bring the negative effect to diversification and affect the firm performance.

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