

# To Investigate the Relationship between Reinsurance activities and the Financial Performance of General Insurance Company in Malaysia

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## Abstract

This study examined the importance of reinsurance activities toward financial performance of general insurance companies in Malaysia. Reinsurance is a key to the financial stability of insurance companies, as they allow insurers to remain solvent by recovering some or all claims from the policyholder. This study applied Multiple Linear Regression method with reinsurance recoverable to policyholders' surplus (RRPHS), net retention ratio (NRR) and net claim ratio (NCR) as the determinants against return on asset (ROA), and data were collected from 2012 to 2016 from the statutory returns filled by general insurance companies in Malaysia to the regulator, Bank Negara Malaysia. The results revealed that RRPHS and NRR have significant impact towards ROA, suggesting that reinsurance utilization indeed affecting the financial performance of the insurers.

**Keywords:** Reinsurance, Firm Performance, General Insurers, Malaysia.

## 1. INTRODUCTION

Insurance is defined as a contract arranged between two parties; the policyholder and the insurance company (also known as the insurer), where the contract allowed compensation for specified loss, damage, illness or death in return for premium paid by the policyholders. Reinsurance is generally a further step to risk-spreading activities, which also referred as insurance for the insurers (Baur & Breutel-O'Donoghue, 2004). Similar as an insurance contract, insurers will pay reinsurance premiums to the reinsurers as

a compensation for providing protection even against wide range of risk (Baur & Breutel-O'Donoghue, 2004).

In the modern time, risk-conscious individuals and organizations, commonly with high-risk profile seek for adequate protection against loss and damage that may arise due to the presence risk. Insurance company too, enter reinsurance contracts to reduce their underwriting risk, as they cannot or do not wish to fully retain the risk by themselves (Aduloju & Ajemunigbohun, 2017). By transferring part of their risk burden to another

insurance companies (also called the reinsurers), the insurers have reduced the likelihood of paying a large amount, as the result from a huge insurance claim, which commonly occurs due to natural disasters and accidents such as fire or explosion of the factory, plantation and power station.

In Malaysia, major business lines in general insurance sector are motor, fire and personal accident as well as medical, compares to oil and gas business. Though insurers have been benefited from drop in occurrence of vehicle theft, Malaysia's high rates of accidents and fatalities remain a major cause of concern. Serious accidents on the road involving death and injuries as well as severe losses in both own and third-party property damages have been determined as one of the factors in large claims, other than due to flood and fire accidents. According to the statistics published by the Ministry of Transport, the total number of road accidents on 2016 was 521,466 compared to 489,606 on 2015, which shows an increment by 7%. The total deaths caused by the road accidents also increased by 7%, from 6,706 deaths in 2015 to 7,152 deaths in 2016, and an alarming of 5, 083 deaths on the road from 400, 788 road accidentson 2017.

This article investigates the effect of reinsurance activities on the financial performance of general insurance company in Malaysia. In terms of financial performance, Bank Negara Malaysia (BNM) has reported that insurance industry in Malaysia contributed up to 20.9% to Malaysia's total gross national income (GNI) in 2016. Meanwhile the overall loss ratio for general insurance industry in Malaysia increased to 58.3% from 55.9% in 2016, mainly due to the rising of motor and medical and health claims. The motivation of the study is that a slow-moving growth and higher loss ratio can be foreseen in the future, and the

distressing growth in the number of injuries and death due to car accidents and medical claims in Malaysia could lead to higher claims to the insurers. And just like many other countries, since insurance industry is one of the main contributors to the overall performance of financial service industry in Malaysia, and furthermore an important source that enhance Malaysia's economy development (Mansor & Radam, 2000), this study is essential to determine the impact of reinsurance dependence among the general insurance companies in Malaysia.

## 2. LITERATURE REVIEW

This section discusses relevant literatures from previous studies, it's determinants and formulated hypotheses, that contribute to the possible relationship between reinsurance activities and insurance company's financial performance.

### 2.1 Determinants of Financial Performance

One of the determinants of financial performance of insurance companies is the firms' dependency on reinsurance. Reinsurance dependence is a form of transferring the insurance companies' risk to the reinsurers, to protect themselves again catastrophic losses, increase underwriting profit and stabilize their earnings. According to Lee and Lee (2012) and Aduloju and Ajemunigbohun (2017), reinsurance purchased by insurance companies may be motivated by an underinvestment problem, which is to prevent bankruptcy. Aduloju and Ajemunigbohun (2017) also argued that they utilized reinsurance for the business' improvement, hence reduced the chances of losses which allowed them to issue more portfolios without an increment in their capitals. Furthermore, Iqbal & Rehman (2014) believed that reinsurance positively affects insurance companies in a way of minimising the volatility of financial

statement, mostly in the area of profit and loss statement. Hence, reinsurance enhanced the firms' earnings. However, in contrast with Obonyo (2013), he believed that increasing in reinsurance dependence may lead to additional cost, which could reduce the insurance retention level and hence, reduced the potential profitability. He believed reinsurance will bring negative impact on the firm's financial performance.

Next, as identified by Akotey (2013), Feng (2013) and Obonyo (2013), firm's size is also one of the determinants of its financial performance. Insurance companies with high profitability are assumed to use less reinsurance compare to those with low profitability. Opined and agreed by Lee and Lee (2012) on their research towards Reinsurance and Property-Liability Insurance Industry's Performance in Taiwan, they found that larger insurance companies have higher operational efficiency and hence, have a better financial performance with less utilization of reinsurance. Insurance companies with larger size are more likely to diversify their investment portfolios very well and able to avoid problem with underinvestment compared to smaller one. Hence, enabled them to reduce their business risks and less likely to depend on reinsurance as much as smaller insurance companies does.

Another determinant would be solvency margin (Ismail, 2013; Obonyo, 2016). Solvency margin or surplus is a measure of assets in excess of the obligations or debts of an insurer. The margin will act as a capital that will cater the unexpected losses from conducting insurance activities. Insurance companies with high solvency margin is said to have better and strong financial health, and it becomes the main attraction to policyholders who prefer insurance company with a strong financial position. According to (Ismail, 2013) and

(Obonyo, 2016), most of the policyholders especially organizations would conduct research on the financial strength of the insurance company before purchasing any insurance contracts. Besides, insurance companies with strong financial position are deemed to be more attractive, since they could provide variety of portfolios to their respective policyholders.

The above determinants have been empirically studied in the insurance sector. However, this article will mainly focus on reinsurance dependence which can be measured through three ratios; reinsurance recoverable to policyholder's surplus (RRPHS), net retention ratio (NRR) and net claim ratio (NCR). Meanwhile return on asset (ROA) will be the measure to the insurers' financial performance, as it is commonly and widely in used in many researches.

## 2.2 Empirical Review

There are numbers of research papers on the impact of reinsurance towards insurance company's performance in other country have been conducted. The findings from the papers varied and held similarities to each other due to the same economic concept and theory applied despite the research took places in different places.

Aduloju & Ajemunigbohun (2017) conducted a research on 'Reinsurance and the Performance of the Ceding Company in Nigeria' and the empirical evidences shown that reinsurance utilization has significant positive effect on the profitability of the ceding company. The researchers applied correlation analysis to explore and test the relationship between the identified variables. Findings concluded that reinsurance utilization, measured through reinsurance ceded ratio (RCR) has high positive correlation with the profitability of the insurance companies, measured through return on asset (ROA), and

moderate positive correlation with return on equity (ROE). The researchers also conducted correlation analysis between reinsurance utilization with underwriting capacity, measured through gross written premium (GWP) and financial stability, measured through policyholder surplus. Similarly, there is a positive significant relationship between RCR with underwriting capacity and financial stability. Hence, the researchers concluded that reinsurance helps in reducing direct insurer's insolvency risk and acts as an effective risk management mechanism to affect the profitability of the insurers in a positive way.

In Taiwan, Lee & Lee (2012) have carried out a research on 'The Impact of Reinsurance on Performance of Property Liability Insurance Company in Taiwan'. This study covered 10 years of time span from 1999 to 2009 through panel data. The researchers adopted Two-Stage Least Squares Regression Analysis with fixed and random effects to study the impact of insurers' performance on reinsurance dependence and likewise, the other way around. From the first regression, the researcher found that ROA brought significant negative relationship with reinsurance purchase, which is in line with the thought of insurers with higher ROA tend to purchase less reinsurance. Secondly, the findings showed that reinsurance has negative effect on the insurers' performance, which meant the higher the insurers' dependence on reinsurance, the lower the profitability of the firms. Similarly, a research conducted on 'Economic Factors, Firm Characteristics and Performance: A Panel Data Analysis for United Kingdom Life Offices' by Shiu (2009) found that reinsurance dependence was negative and statistically significant towards the investment yield. This may be because there is a cost for reinsurance, where the insurers were required to pay a certain

amount of premium collected to reinsurer. The more the amount paid to reinsurer to reduce the risk, the lower the amount available to invest (Shiu, 2009).

In Kenya, few studies on reinsurance have been conducted. One of it is by Obonyo (2016) who has conducted a research on the 'Effect of Reinsurance Programmes on Financial Performance of General Insurance Companies in Kenya'. This research found that there is a negative relationship between retention ratio and underwriting profit. When the insurers retain more risk, hence ceded less risk to the reinsurers, they will take proportionally larger share of losses in case of claims which will decrease the underwriting profit. However, the result is statistically insignificant at  $\alpha = 0.05$ . Other variables like net claim ratio and net commission ratio have significant negative relationship and significant positive relationship with underwriting profit respectively. With higher net claims incurred, the lower the underwriting profits earned. Likewise, the higher earned net commission, the higher the underwriting profit ratio.

Another study on 'Determinants of Financial Performance: The Case of General Takaful and Insurance Companies in Malaysia' by Ismail (2013) involved panel data within the period of 2004 to 2007. Few of the determinants used to measure the financial performance of Malaysia's Takaful and Insurance Companies are retakaful dependence (RTCTA) and insurance dependence (RICTA). The researcher found significant positive relationship at 1 percent level between retakaful and reinsurance dependence with investment yield. High dependence on retakaful and reinsurance helped the companies to diversify and took more portfolios and hence, able to generate more return instead. However, this finding was in contrast with Shiu (2009) and Lee and Lee (2009), where it was found that insurance companies with high

dependence on reinsurance have lower return on asset and investment yield.

In U.S, Feng (2013) has carry out a research on 'Reinsurance and Firm Performance in The U.S. Property-Liability Industry' by applying Multivariate Regression Analysis. A set of independent variables based on the firm level, individual reinsurance cession information with reinsurance premium ceded and reinsurance recoverable is tested against insurers' performance measured through return on asset and return on equity. The researcher claimed that large firms tend to purchase less reinsurance than small firms due to their stronger financial ability. The researcher also found that the firm performance is positively related to reinsurance utilization, which is measured through premiums ceded or recoverable. Likewise, there is a positive relationship between reinsurance utilization, measured through premiums ceded to direct premium plus reinsurance assumed (RPC/DWPA) with ROA and ROE. The empirical result concluded that reinsurance is an effective and efficiency risk management device for property-liability insurance company in U.S.

Iqbal & Rehman (2013) conducted a research on 'Reinsurance Analysis with Respect to Its Impact on the Performance: Evidence from Non-Life Insurer in Pakistan' with reinsurance ceded ratio (RCR) and reinsurance recoverable to policyholder's surplus ratio (RRPHS) as explanatory variable and loss ratio (LR), expense ratio (ER) and firm size to represent the measure of the firm's performance. Logarithm of Assets was used as indicator for the firm's size. By applying Panel Data Regression Method, the researcher found that reinsurance ceded ratio brought a significant negative impact on both loss ratio and expense ratio. Meanwhile, reinsurance recoverable to policyholder's surplus is found to have significant positive impact on loss ratio,

but insignificant positive relationship with expense ratio. Hence, the none significance reinsurance recoverable to policyholder's surplus towards expense ratio is not included in the model. Lastly, the researcher also found that reinsurance ceded ratio and reinsurance recoverable to policyholder's surplus has significant positive and significant negative impact towards the firms' size. Hence, the researcher made a conclusion that reinsurance has significant relationship with the firms' performance.

### **3. RESEARCH METHODOLOGY**

#### **3.1. Dependant variable and its measurement**

Return on asset (ROA) has been chosen as the dependent variable as it is considered as an important tool to measure a firm's financial performance. It is a key indicator to firm's overall productivity, by measuring how profitability a firm is in relative to its total assets. With return on asset, manager, investor and analyst could have a picture on how efficient the firms are in utilizing their total resources to generate earnings, and simultaneously reflecting on to what level does the predictor variables effecting their performance. Return on asset is measured as profit after taxes divided by total assets.

#### **3.2. Predictor variables and their measurements**

The choice of predictor variables is based on one of the determinants of financial performance of insurance company; the reinsurance dependence. Since reinsurance contributes by reducing unnecessary volatility in the financial statement and prevent great loss during huge claims, firms will have more assets that they can use to turn into earnings and create sustainable shareholders' value, and hence, improves the performance of the

firms. These predictor variables and their measurements are listed as below:

a) Reinsurance Recoverable to Policyholder's Surplus (RRPHS)

RRPHS is the amount of incurred losses covered by the reinsurer(s) compared to policyholder's surplus. This ratio is used in determining how dependent an insurer is on reinsurer(s) to stay solvent. It is measured as the sum of ceded reinsurance recoverable, ceded unearned premium and ceded commission divided by policyholder's surplus.

b) Net Retention Ratio (NRR)

Retention ratio is defined as the percentage of the underwritten portfolios which is not transferred to the reinsurer(s). Theoretically, firms that retain more risk and cede less risk to reinsurer(s) will bear more losses than reinsurer(s) in the case of claim to happen. But ceding more risk could lead to an additional cost, and there's possibility in bringing negative impact instead to the financial performance due to lack of resources for other operational purpose. Net retention ratio is measured as net written premium divided by gross written premium.

c) Net Claim Ratio (NCR)

Net claim ratio, also commonly known as loss ratio is expressed as ratio between net claims incurred and net premiums collected. The cost of claim pay-outs and expenses is the largest expenses category for insurance company, accounting for up to 80 percent of premium income (Dube, et al., 2017). Lower claim ratio is preferable as it results in higher profitability since insurers didn't have to pay for more than what they should. It is calculated as net claim incurred divided by net premium collected.

### 3.3. Analytical Model

This study employed Multiple Linear Regression as the model estimation, where cross-sectional time horizon data is involved from 16 general insurance companies in Malaysia. The equation of the regression is as follow:

$$ROA_{it} = \beta_0 + \beta_1 RRPHS_{1it} + \beta_2 NRR_{2it} + \beta_3 NCR_{3it} + \varepsilon_{it};$$

Where

- $\beta_0$  is a constant
- $\beta_1, \beta_2, \beta_3$  are the coefficient of the respective predictor variables
- $\varepsilon_{it}$  is error term between the company

The test of significance used, which is F-test will determine the goodness of fit of the model. And the T-test is used to determine the significance of a single predictor variable with dependent variable. Hypotheses for both tests are as follows:

F-test:

$$H_0: \beta_1 = \beta_2 = \dots = \beta_n = 0$$

$$H_1: \text{at least one } \beta_n \neq 0;$$

where  $n = 1, 2, 3, \dots$

If  $F_{obs} > F_{critical}$  or  $p\text{-value} < \alpha$ ,  $H_0$  is rejected. Hence, reaching a conclusion of there is a goodness of fit in the model.

T-test:

$$H_0: \beta_n = 0$$

$$H_1: \beta_n \neq 0; \text{ where } n = 1, 2, 3, \dots$$

If  $t_{obs} > t_{critical}$  or the p-value is  $< \alpha$ ,  $H_0$  is rejected. Otherwise,  $H_0$  is failed to reject and thus, reaching a conclusion that the predictor variable(s) is insignificant towards the dependent variable. The

coefficient of determination ( $R^2$ ) will be used to evaluate the level to which the variations of reinsurance activities (predictor variables) explain the underwriting profit (dependent variables) (Obonyo, 2016). The test of significance will be at 95% confidence level ( $\alpha = 0.05$ ).

Furthermore, this model will first go through normality test, heteroscedasticity test, multicollinearity test and autocorrelation test to ensure the reliability and the validity of the analysis.

### 3.4. Data

This study employed secondary data which is extracted from the statutory returns filled by the insurance companies in Malaysia to the regulator, which is the Bank Negara Malaysia. Such data like net claims incurred, gross and net written premiums, profit after tax, etc., are readily available and can be used to calculate the ratio of reinsurance recoverable to policyholders' surplus (RRPHS), net retention (NRR), net claim (NCR) and return on asset (ROA).

As at March 2018, this study involved only 16 out of 21 registered and licensed general insurance companies for the year of 2012 to 2016. Insurance companies like AM General Insurance Bhd. is excluded

due to unavailability of data for the year of 2012 and 2013 after the acquisition with Kurnia Insurance Bhd. on 2012. Danajamin Nasional Bhd. is excluded because the company is principally engaged in providing financial guarantee insurance (i.e. guarantee insurance for bonds and sukuk), Liberty Insurance Bhd. is excluded due to inconsistency on the period of the annual report that takes place (i.e. Annual report at end of March until 2013 and changed to end of December from 2013 onwards); and Etiqa General Insurance and Zurich General Insurance Malaysia Bhd. are excluded because the companies were yet to separate their life, general and investment linked activities into different businesses. List of the involved insurance companies in this study is attached in appendices as Table 3.1.

## 4. DATA ANALYSIS, FINDINGS AND DISCUSSIONS

### 4.1 Descriptive Statistics

This section will look into the average mean of each variables, and the sense measure of the distribution of the variables through the skewness and kurtosis values. The values could also be used to determine the normality of the variables.

*Table 1.1 Descriptive Statistics*

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Reinsurance Recoverable to Policyholder's Surplus	80	.1253	1.5316	.746163	.3869459	.344	.269	-.932	.532
Net Retention Ratio	80	.3118	.8457	.682407	.1162653	-.775	.269	.324	.532

Net Claim Ratio	80	.3226	.7696	.5594 75	.0893943	-.348	.269	-.189	.532
Return on Asset	80	.0046	.1012	.0460 85	.0174650	.725	.269	1.036	.532
Valid N (listwise)	80								

Source: Research Findings

The sample size for all variables are 80, with none of the sample set being dropped from the analysis. The average reinsurance recoverable to policyholder's surplus is 74.62%; the average premium retention ratio is 68.24%; the average net claim ratio is 55.95% and the average of return on assets ratio is 4.61%. The sense of measure of the distribution of the variables indicates that reinsurance recoverable to policyholder's surplus, net retention ratio, net claim ratio and return on asset are normally distributed as their skewness measures of 0.344, -0.775, -0.348 and 0.725 respectively are within the interval of (-2.0, 2.0). Furthermore, all the kurtosis values are within the range of (-2.0, 2.0) as well and hence, all the variables are normally distributed.

#### 4.2 Inferential Analysis

This section will look at the inferential analysis of the study. It shows the statistical significance of the model, the strength of correlations of the independent variables and the coefficients of the

variables, which is the estimates of the study parameters. Since positive autocorrelation is detected within the errors, Cochrane Orcutt corrective method is done to fix the autocorrelation within errors. Model summary for the regression models before the correction is attached in appendix as Table 4.1.

Before Cochrane Orcutt Corrective method is done, the value of Durbin-Watson,  $d$  is 1.239, which is lower than  $d_L$  at 1.534 at significance level of 95%. Hence, the null hypothesis is rejected and there exists positive autocorrelation between residuals. Further inspection from PACF plot in appendix Figure 6.1 PACF Plot of Residuals shows that residuals to be beyond the "5% significant limit" at lag 1, reaching a conclusion that there's an autocorrelation at lag 1. Hence, corrective method of Cochrane Orcutt with iteration of 1 is employed to remove the autocorrelation between residuals, and the new Durbin-Watson is generated in Table 4.2 Model Summary below.

Table 4.2 Model Summary<sup>b</sup> (after Cochrane Orcutt Corrective)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.650 <sup>a</sup>	.422	.399	.01133	1.957

a. Predictors: (Constant), Lag\_NCR, Lag\_RRPHS, Lag\_NRR

b. Dependent Variable: Lag\_ROA

Source: Research Findings

With a new value of Durbin-Watson,  $d$  of 1.957, new critical value for the upper and

lower bounds are  $d_L=1.515$  and  $d_U=1.739$ . Since  $d_U < d < 4 - d_U$ , there is



no evidence the residuals are positively correlated in the model with the transformed variables.

The result in table above also shows R square value of 0.422 which means 42.2% of the regression can be explained by the independent variables. The value is relatively low with less than 50%, which means there are other variables that explained this regression but not included in this model. As example, the inclusion of expense ratio, gross leverage ratio, size of

firm, etc. might improve the value of R square. Meanwhile, the adjusted R square of 0.399 provides unbiased estimate for R square value, because the value will not be adjusted when new variables are added in. Based on the table, about 39.9% of the variation of return on asset is explained by the independent variable. However, if the inclusion of other variables enhances the model more than would be expected by chance, the adjusted R square will increase.

**Table 4.3 ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.007	3	.002	18.261	.000 <sup>b</sup>
	Residual	.010	75	.000		
	Total	.017	78			

a. Dependent Variable: Lag\_ROA

b. Predictors: (Constant), Lag\_NCR, Lag\_RRPHS, Lag\_NRR

Source: Research Findings

From the table, the regression model is statistically significant as shown by the sig. value of 0.000 (p-value < 0.05) and F value of 18.261. Reinsurance recoverable

to policyholder's surplus, net retention ratio and net claim ratio are statistically significantly predicted return on asset,  $F(3,75) = 18.261$ , p-value < 0.0005.

**Table 4.4 Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.045	.013		3.508	.001		
	lag_RRPHS	.012	.006	.249	1.918	.059	.456	2.191
	lag_NRR	.050	.021	.301	2.309	.024	.454	2.202
	lag_NCR	-.120	.017	-.629	-7.125	.000	.989	1.011

a. Dependent Variable: lag\_ROA

**Source: Research Findings**

The following regression equation represents the relationship between the independent variables (reinsurance activities) and the dependent variable (return on asset) as shown in table above:

$$\text{Return on asset} = 0.045 + 0.012\text{RRPHS} + 0.05\text{NRR} - 0.12\text{NCR}$$

The model indicates that the y-intercept which is 0.045 means that 0.045 is an autonomous component of return on asset which is not affected by the independent variables (reinsurance recoverable to policyholder's surplus, net retention ratio and net claim ratio). The reinsurance recoverable to policyholder's surplus affected the return on asset by 0.012 which indicates positive relationship between the variables. a unit increase in the reinsurance recoverable to policyholder's surplus will increase the return on asset by 0.012. The net retention ratio also affects the return on asset by 0.05, a positive relationship whereby a unitary increase in net retention ratio causes the return on asset to increase by 0.05. However, net claim ratio has negative effect of -0.12 towards return on asset. For every unit of increase in net claim ratio, the return on asset will decrease by 0.12.

The model also shows that of the three predictor variables, only reinsurance recoverable to policyholder's surplus does not have a significant relationship with return on asset as indicated by p-value of 0.059 (p-value > 0.05). Meanwhile net retention ratio and net claim ratio have p-values of 0.024 and 0.000 respectively, which satisfies p-value < 0.05. Hence, net retention ratio and net claim ratio both has significant relationship with return on asset.

In addition, the tolerance values of 0.456, 0.454 and 0.989 for reinsurance

recoverable to policyholder's surplus, net retention ratio and net claim ratio respectively indicate that there is no multicollinearity among the variables as the tolerance values are all greater than 0.1. The VIF values of 2.191, 2.202 and 1.011 for the independent variables (lesser than 10) indicates no multicollinearity as well.

### 4.3 Interpretation on the Findings

The reinsurance variables affect the performance of general insurance companies in Malaysia.

First, reinsurance recoverable to policyholder's surplus has positive relationship with return on asset. This means that higher amount of incurred losses covered by reinsurers allow insurance company to have more funds to generate positive cashflows. It consistent with Iqbal& Rehman (2013) who found that reinsurance recoverable to policyholder's surplus has positive relationship with loss ratio, which is a ratio to measure the profitability of the company. Feng (2013) also found that reinsurance recoverable to policyholder's surplus has positive relationship with both return on asset at 1% and return on equity at 5%. However, the predictor variable is not significance towards return on asset with p-value of 0.059.

Second, the net retention ratio has a significant positive relationship on dependent variables of return on asset. That is, by retaining more risk to itself and cedes less risk to the reinsurers, the insurance company is able to make a greater profit by performing activities that can generate more profit, i.e. investing in assets. The result however in contrast with Obonyo (2016) who found that net retention has negative relationship with

underwriting profit ratio and financial performance of insurance company, but in Malaysia where no disastrous natural disaster like earthquakes, volcanic eruptions and tornadoes to occur, it could be the reason why insurers do not cede more risk to reinsurers. Ceding too much risk when there is not much of high-risk claim will only result in unnecessary reinsurance cost and reduce the insurers' available funds for other investment operating purpose.

Third, there is a negative relationship between net claim ratio with return on asset. In other words, when there are higher net claims incurred, the insurance company could not retain more underwriting profits and hence, reducing the return on asset. Within the three variables, net claim ratio shows strongest relationship with return on asset as it has coefficient of 0.12. The strong negative relationship is also statistically significant with the p-value of 0.000 which is lower than alpha value of 0.05. This relationship is consistent with Obonyo (2016) who found that an increase in expenses deteriorate profitability and subsequently erodes the profitability of the company. Murungi (2013); Akotey (2013) also found that there is negative relationship between the net claim ratio and the performance of the insurers. Generally, claims are direct expenses of the insured risks, and overly high claims which may need to be financed through other sources of revenue such as investment income. So, this will reduce the expected profit of the company. Furthermore, since insurance company shares risks with reinsurers, its share of risks will increase net loss as well.

## 5. SUMMARY, CONCLUSION AND RECOMMENDATIONS

### 5.1 Summary and Conclusion

This study investigates the effect of reinsurance activities with the financial performance of general insurance companies in Malaysia. Measures of reinsurance recoverable to policyholder's surplus, net retention ratio and net claim ratio have been used as the predictor variables with return on asset as dependent variable.

There exists positive relationship between reinsurance recoverable to policyholder's surplus with return on asset. It shows the importance of being covered by reinsurers since the incurred losses covered by reinsurers allowed the insurers to retain more surplus instead of covering the policyholders' claims, especially if the claims are in a huge amount. It also helps in preventing the insurers from using the policyholder's surplus for the purpose of mitigating the risk, instead of utilizing the meaningful surplus to generate more positive cash flows.

Another positive relationship is between the net retention and return on asset, which indicates insurers that retain more risk is more profitable than those that retain less risk. Since reinsurance are highly in cost, transferring more risk to the reinsurers will lead to more portion of collected premium to be paid to them. This reduces the amount of funds on hand and limiting the insurers from engaging in more profitability assets' investments. However, insurers that retain more risk bear higher consequences in the case of a sudden huge amount of claim. Hence, insurers must be able to determine the optimum level of risk that they can bear in respond to their ability in covering the said risk, i.e., ensuring a sufficient amount of reserves are on hold to prevent from the usage of the

companies' profit or shareholders' surplus to cover the loss.

Lastly, there exists negative relationship between net claim ratio with return on asset. This is to be expected since higher claims incurred is a cost to the insurers. It deteriorates the available premiums collected, especially if the incurred claims are higher than the premium earned. In addition, gross premiums written are normally treated as an outstanding, which sometimes turns out as a bad debt. When the premiums collected are not at least in the same value of the claim, insurers are lacking in funds for the coverage or to underwrite new portfolios.

Despite all these findings and reasonings, it is important for insurance companies to notice that depending on reinsurance to mitigate the risk of losses is not always lead to a better performance; i.e., reinsurance activities act like a double-edged sword. Excessively purchasing reinsurance contracts indicates the inability of the insurers to properly measure their exposure risks. It also comes with high cost for the coverage and not to mention any underlying fees, like employees' commission fees, acquisition fees and consultation fees. However, underinsured will lead to another major problem as well, like depletion of investment incomes or shareholder's surplus.

Hence, it is important for an insurance companies to optimally measuring their needs for reinsurance.

## 5.2 Recommendations

One of the recommendations of this study is that insurance companies should take proper measures before purchasing any reinsurance contract. Insurance companies may look at their past loss experiences, frequency of claims to occur on what reasons and size of the risk. In order to prevent lack in funds for investing operation, insurers should know the

optimal level of retention, so they will not retain too much, undermining their surplus for a better usage or retain to less, beyond their capabilities in covering them.

It is also recommended for the company to have lower claims ratio and if possible, with lower retention level. This is because with lower claims, insurers do not have to worry on excessive sudden of claims that might wipeaway their shareholder's funds. It also indicates the proficiency of insurance companies in measuring their risks and exposures, preventing them from paying more than they should. In addition, it helps to attract more investors since the companies able to exhibit a healthy balance sheet. However, it is noted that insurance companies will only attract more investors if they are able to provide a stable performance reflected from their underwriting business.

Lastly, it is recommended for the insurers to have a proper claim's management as well. It is important to establish a technology framework that advanced in automation and analytics. This will help insurers to safe guard against fraudulent claims that cause unnecessary losses.

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## APPENDICES

*Table 3.1 List of General Insurance Company in Malaysia in Used*

NO	NAME
1	AIG Malaysia Assurance Bhd
2	AXA Affin General Insurance Company
3	Allianz General Insurance Company
4	Berjaya Sompo Insurance Bhd
5	Chubb Insurance Malaysia Bhd
6	Great Eastern General Insurance Bhd
7	Lonpac Insurance Bhd
8	MPI Generali Insurans Bhd
9	MSIG Insurance (Malaysia) Bhd
10	Pacific & Orient Insurance Co. Bhd
11	Pacific Insurance Bhd
12	Progressive Insurance Bhd
13	QBE Insurance (Malaysia) Bhd
14	RHB Insurance Bhd
15	Tokio Marine Insurance (malaysia) Bhd
16	Tune Insurance Malaysia Bhd

**Source: Research Findings**

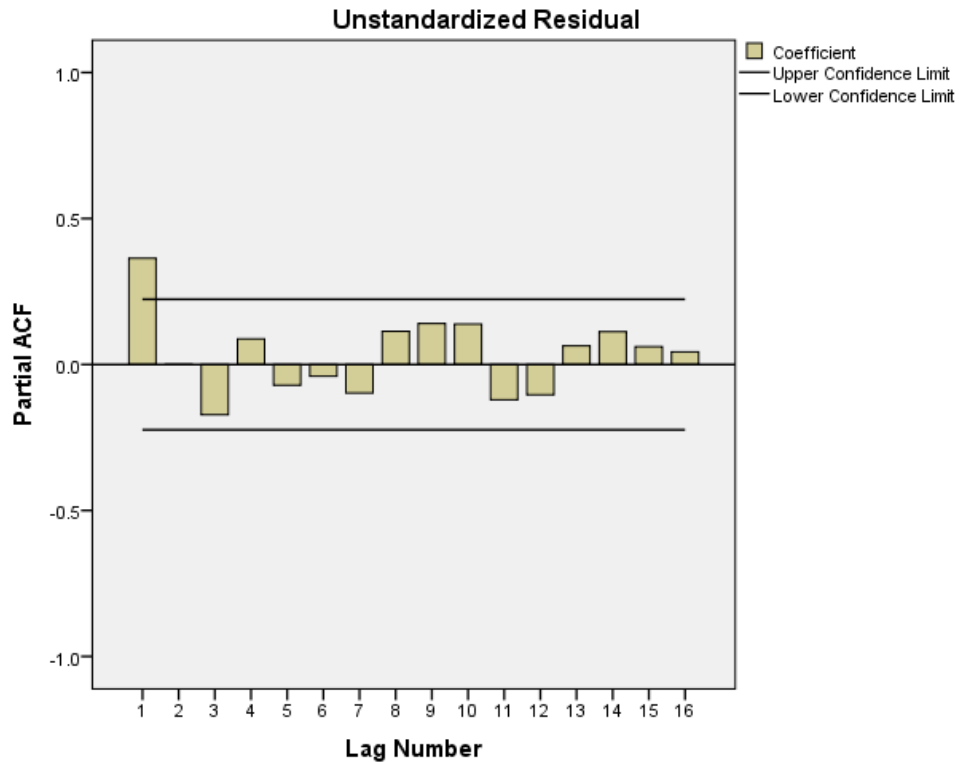
*Table 4.1 Model Summary<sup>b</sup> (before Cochrane Orcutt Corrective)*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.719 <sup>a</sup>	.516	.497	.0123830	1.239

a. Predictors: (Constant), NCR, NRR, RRPHS

b. Dependent Variable: ROA

Source: Research Findings



*Figure 6.1 PACF Plot of Residuals*

Source: Research Findings