

# Which is Important in Defining the Profitability of UK Insurance Companies: Internal Factors or External Factors?

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**Abstract:** The purpose of this paper is to examine empirically the impact of internal factors and external factors on the performance of UK insurance companies. To do so, we use a sample composed of 20 insurance firms during the period from 2000 to 2018. We employ the panel data estimation to capture the impact of internal factors and external factors on the performance of UK insurance companies. We use two measures of performance such as, ROA and ROE. Our results show that size of firm, liquidity, GDP, CPI and WTI have a positive and significant effect on the performance of UK insurance companies. But we find that leverage, asset turnover and interest rate present negative and considerable impact on the profitability of UK insurance enterprises. These findings can be considered as a beneficial for insurance enterprises, directors, representatives, and shareholders in making decision and improving the profitability of their organizations.

**Keywords:** Performance; internal factors; external factors; panel data; UK insurance industries.

**JEL Classifications:** G22, G52, I13.

## 1. INTRODUCTION

Some researchers and investors consider insurance industries as a risk managing system that the poor can utilize to reimburse for the unavailability of suitable state-financed social safety procedures. Others see it as an opportunity to provide financial services to low-income populations in return for remuneration.

Whatever aspect you focus on, the goal of microinsurance programs is sustainability; in fact, funding by donors or governments is either only temporary or unavailable. In the absence of funding, programs are all subject to the same economic and market forces as ordinary businesses, so they must be managed in a professional manner. However, management objectives cannot be achieved without constant monitoring and transparent measurement of performance.

In view of the accelerating developments witnessing the business environment, trade liberalization, and the significant development in the structure of the work of financial institutions, especially insurance companies, the escalation of intensity competition between these companies, and the expansion in the quality of the work they do and the services

they provide, which have become more complex ; Since it is no longer limited to only traditional insurance business, but rather to provide more sophisticated insurance products and to provide various other financial services, and that insurance companies are an important and essential part of the financial sector of any country, and given the large amount of money invested, And its operation in this sector, and because most modern financial deals and most of the services provided by other financial institutions pass through insurance companies, so the whole process of evaluating the performance of these companies is a subject of the utmost privacy and accuracy; To find out the true financial and technical situation of companies operating in this sector.

In latest decades, a large literature has tried to assess profitability in the financial services sector. Various of the research in this topic have been concerned with the banking sector, for example Berger et al. (1987), Ferrier and Lovell (1990), Berger and Humphrey (1991) and Yazdi et al. (2019). Studies in the life insurance sector are much less developed and the pioneers in this area are Cho (1986), Prakash et al. (2011), Shukla (2018), Chen (2018), Lee (2018), Batool and Sahi (2019) and Denkova (2019).

Our objective in this research is to examine the effect of internal factors such as Size of firm, liquidity, leverage, and asset turnover and external factors such as GDP, CPI, interest rate and WTI on the profitability of United Kingdom insurance firms. Then, we classify the extremely essential contributing factor of financial and economic profitability of insurance firms in United Kingdom.

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Then, we utilize a panel data for a sample composed of 20 insurance companies through the period from 2000 to 2018. We utilize two processes of the profitability of insurance firms such as, ROA (Return on Assets) and ROE (Return on Equity). Based on the Hausman test, we use Random effect model to estimate the two measures of performance. From our empirical results, we show that size of firm, liquidity, GDP, CPI and WTI have a positive and significant influence on the performance of UK insurance companies. Also, we find that the indicators leverage, asset turnover and interest rate present a negative and considerable effect on the profitability of insurance firms in United Kingdom. These outcomes will be advantageous for insurance organizations, authority, legislators, policymakers, and shareholders in making judgment and improving the profitability of their businesses.

To do so, our paper is organized as follow; in section 2, we present a literature review for the determinants of insurance companies. In section 3, we present the econometric methodology. The data is analyzed in section 4. The empirical findings of our investigation are presented in section 5. Finally, section 6 concludes and remarks.

## 2. LITERATURE REVIEW

The existing financial and economic literature that investigating the profitability of insurance enterprises has involved the consideration of numerous investigators and researchers, particularly the importance in identifying the components accountable for financial profitability. The profitability of insurance enterprises is usually affected by internal determinants particular to insurance and external determinants concerning to the macroeconomic indicators. Then, the internal factors can additionally be so-called microeconomic indicators.

Singh et al. (2019) study in their paper the dimension of Quality management practices (QMP) regarding business performance. A pathway model is created which demonstrate the link between QMP and business profitability. They employ SPSS AMOS 21 software package to implement confirmatory factor assessment. Their empirical results suggest that top management support (TMS), supplier relationship (SR), workforce commitment (WC), people management (PM), workplace organization (WO) are immediately associated to business profitability.

Besides, Deyganto and Alemu (2019) investigate the determinants affecting the financial profitability of insurance enterprises existing in Hawassa city Administration in Ethiopia. Then, Deyganto and Alemu (2019) utilize a causal investigation model with mixed examination methodology owing to quantifiable description of dataset required to prepare the statement of his analysis. Deyganto and Alemu (2019) utilize six common insurance enterprises that have 10 years reviewed financial reports during the period of study since 2008 to 2018. Their empirical findings demonstrate that out of eight (8) independent variables employed in their model, five (5) indicators such as underwriting, premium development, solvency proportion, progress rate of GDP, and inflation rate have significant and considerable effect on financial profitability of the insurance firms operate his activities in Hawassa city Administration.

Phan et al. (2020) study empirically the link between customer collaboration practices in supply chain management and operational performance of manufacturing industries. They utilize a data collected amongst 2013 and 2015 from 304 manufacturing businesses in 13 countries throughout the world in the framework of high-performance manufacturing development. The empirical results of statistical descriptive investigation, correlation assessment and regression studying demonstrate that customer collaboration practices have positive link with operational profitability in terms of quality, cost, delivery speed, on-time delivery and flexibility.

### 2.1. Microeconomic Determinants

The academic literature presents evidence that recommends a solid nexus among the performance of insurance businesses and several microeconomic factors or external factors. The latter which the literature recommends as essential factors, are the size of the firm, the capital structure, the solvency, the leverage, and the age of the firm.

The linkage among the size of the company and the profitability of insurance firms has been much discussed among researchers. Some researchers find that size has a positive influence on performance such as Eling and Luhnen (2010), Malik (2011) and Biener et al. (2016) who consider that when the company expands its profitability improves; this is justified by achieving economies of scale.

The concept of financial performance has received important consideration from scholars in numerous areas of business. It is of primary apprehension of practically all business stakeholders in any sector especially for insurance enterprises' health and ultimately its survival (Mwangi and Wanjugu, 2015).

In the insurance industry, having to buy a lot of insurance premiums reduces income volatility because risk sharing is effective. Others suggest that very large enterprises suffer from economies of scale because it is difficult to manage a large insurance company, which leads to additional costs. Mwangi and Wanjugu (2015) support this idea. In the same alignment, the holding of capital by public authorities hampers performance.

Indeed, Neelaveni (2012) demonstrates that private insurance enterprises perform healthier than public ones. In the same alignment, Kumari (2013) suggests that there is a significant rise in the commercial performance of Indian life insurance enterprises after privatization. Solvency is the ability of a company to meet its long-term fixed expenses and thereby achieve growth.

Many studies have been conducted to determine the influence of solvency on the profitability of insurance enterprises; Bawa and Chattha (2013) find a non-significant nexus among solvency and performance.

Numerous empirical studies have found a negative linkage amongst leverage and the profitability of insurance enterprises like Malik (2011) who elaborates a study on the Pakistani insurance enterprises.

Nevertheless, Boadi et al. (2013) prepare a paper on insurance enterprises in Ghana notice a positive but not significant nexus among leverage and insurance profitability. As

for the age of the firm, it has been believed essential in numerous studies; two streams of investigation exist. The first line of literature maintains that age could help enterprises become further efficient throughout learning.

However, the second line of research demonstrates that older organizations are beyond bureaucratic and are not adaptable sufficient to be competent to adapt immediately to switch and can be overwhelmed by younger and more adaptable companies.

Mwangi and Wanjugu (2015) assume that leverage, equity capital, management competence index, size and ownership structure were the most important factors of financial profitability on insurance enterprises.

Derbali and Jamel (2018) investigate the influence of enterprise-specific characteristics such as: size, leverage, tangibility, risk, growth, liquidity and age, on the performance of 8 Tunisian insurance enterprises across the period of study from 2005 to 2015. Their empirical results suggest that the variables size, age and growth are the most important determining factor of the profitability of Tunisian insurance enterprises as measured by Return on Asset (ROA).

## 2.2. Macroeconomic Determinants

In addition to the microeconomic variables, there are several empirical works that suggest that external factors like; GDP, interest rate, inflation, unemployment and M2 money supply; are important determinants of the profitability of insurance enterprises.

Gross Domestic Product or GDP represents the market value of all finished goods and services produced in a country each year, and the increase in GDP generally reflects the household's disposition of larger income streams and the increased profitability of companies. The studies carried out on this subject confirm the existence of a positive nexus among GDP growth and the profit increase of the firm.

Oshinloye et al. (2009) point out that a country cannot achieve meaningful development without the existence of good insurance and that insurance is indispensable in any nation. Ezirim (2002) shows that insurance is seen as an indispensable tool for economic progress and growth and development.

Thus, insurance is closely linked with the country's economic growth. Crowley (2007) defines the interest rate as the price a borrower pays for the use of money borrowed from a lender. Economists support the idea that the interest rate is the price of the capital's speech over time; the monetarist uses the interest rate to attract more funds and as interest rate increases attract more savings and lower interest rates will encourage investors to look for other investments. Insurance enterprises themselves realize more income on their investments when interest rates rise but if these rates are too high this can affect the level of premiums.

Jhingan (2002) defines the inflation as a persistent and substantial growth in the general level of prices and the price growth tends to deduce total household expenditures which in turn lead to lower GDP and reduce the wealth available to households. Thus, inflation can reduce insurance income by reducing the number of insurance policies created.

However, Molyneux and Thornton (1992) show that there is a positive nexus among asset returns and inflation suggesting that the growth of inflation will be favorable to the increase in financial institution profits. The growth in the unemployment rate decreases the present and future purchasing power of households, which leads to a fall in the production of goods and services, because generally the fall in demand leads to a fall in supply. Unemployment has a negative effect on household cash flows and thus raises the burden of debt.

For enterprises, the increase in the unemployment rate may reduce production as a result of the fall in effective demand and, regarding insurance enterprises, the growth in unemployment may reduce the number of insurance contracts and influence thus their income.

## 3. ECONOMETRIC METHODOLOGY

In order, to examine the nexus among the independent variables (internal factors and external factors) and the performance of insurance companies in UK, we execute a linear regression analysis on panel data. This methodology suggests the internal and external factors that have positive or negative impact on the profitability of any firm.

First, we are going to identify the nature of estimation who is a regression on data of panel. Our selection is validated by the existence of a twin dimension at the level of the utilized database; the first is the temporal (a period of 19 years) and the second is individual (our sample consists of 20 insurance companies in UK).

We use two indicators of profitability such as: return on asset (ROA) and return on equity (ROE). These indicators can be affected by numerous variables and influences the whole profitability of any firm across the world. In this paper, we classify the determinants in internal and external factors. The panel database has the land of merging two dimensions, the individual dimension and the temporal dimension. According to the preceding mentioned literature the creation of a model suggests the description of relationships amongst two or additional indicators; therefore, our model is commonly identified by the subsequent linear link (Batool and Sahi, 2019):

$$y_{i,t} = a + \beta x_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where,  $y$  represents the dependent variable,  $(i,t)$  imply the insurance company  $(i)$  and the year  $(t)$ , respectively,  $a$  it is a constant,  $x$  represents the vector of the independent variables and  $\varepsilon_{i,t}$  represents the error term.

In this paper, we use 4 internal factors and 4 external factors to investigate the performance of insurance companies in UK. By incorporating the selected factors, the estimated models are presented as follows:

$$ROA_{it} = \alpha_0 + \beta_1 * SF_{it} + \beta_2 * LIQ_{it} + \beta_3 * LEV_{it} + \beta_4 * AST_{it} + \beta_5 * GDP_{it} + \beta_6 * CPI_{it} + \beta_7 * INT_{it} + \beta_8 * WTI_{it} + \varepsilon_{it} \quad (2)$$

$$ROE_{it} = \alpha_0 + \beta_1 * SF_{it} + \beta_2 * LIQ_{it} + \beta_3 * LEV_{it} + \beta_4 * AST_{it} + \beta_5 * GDP_{it} + \beta_6 * CPI_{it} + \beta_7 * INT_{it} + \beta_8 * WTI_{it} + \varepsilon_{it} \quad (3)$$

Where,  $ROA_{it}$  and  $ROE_{it}$  represents the dependent variables which measure the performance of insurance firms in UK,

$\beta_1, \dots, \beta_8$  indicate the coefficients of independent variables which measure internal factors and external factors, (i,t) indicate the insurance firm (i) and the year (t) respectively,  $\alpha_0$  represent the constant and  $\epsilon_{i,t}$  represents the error term. All variables are defined in Table 1.

**Table 1. Variables definition.**

Variable	Code	Definition
Return on Asset	ROA	Return on assets measures by divided net income to total assets.
Return on Equity	ROE	Return on equity measures by divided net income to total shareholder equity.
Size of firm	SF	Size of firm is measure by the taking log of firm total asset.
Liquidity ratio	LIQ	Liquidity is the ratio of current assets and current liabilities
Leverage ratio	LEV	Leverage is measures by divided total liabilities to total equity.
Asset Turnover	AST	Asset turnover shows value of revenue or sales of the company generated relative value of assets.
Gross domestic product	GDP	GDP stands for gross domestic product which shows growth of economy of a country
Consumer price index (inflation rate)	CPI	CPI refers to rate of change in the price of any commodities.
Interest rate LIBOR	INT	Interest rate represent the percentage of amount have been charged to provide services.
West taxes intermediate oil price	WTI	WTI stands for west taxes intermediate. It is grade of crude oil and used as benchmark in oil pricing.

Source: Own elaboration.

#### 4. DATA ANALYSIS

In this paper we examine empirically the influence of internal factors and external factors on the performance of UK insurance companies. To do so, we use a sample composed of 20 insurance firms during the period from 2000 to 2018. We utilize an annually data. The table 2 recaps the descriptive statistics of the variables utilized in this paper. From this table, we can remark that in average the higher value is for Leverage ratio (16.646) followed, respectively, by Interest rate LIBOR (10.194), Gross domestic product (6.709), Consumer price index (2.865) and West taxes intermediate oil price (2.159).

**Table 2. Descriptive statistics.**

	ROA	ROE	SF	LIQ	LEV	AST	GDP	CPI	INT	WTI
Maximum	0.910	3.951	6.776	0.652	24.671	0.319	6.799	2.930	1.463	2.414
Minimum	-0.428	-8.898	0.659	0.067	13.042	0.032	6.627	2.678	1.061	1.757
Mean	0.095	0.895	6.376	0.206	16.646	0.045	6.709	2.865	10.194	2.159
Std.Div	0.190	2.198	0.915	0.129	2.525	0.047	0.052	0.048	25.096	0.168
Skewness	2.804	0.053	0.751	0.256	3.931	1.735	1.946	1.024	3.934	4.854

For the two statistics of skewness (asymmetry) and kurtosis (leptokurtic), we can show that the variables used in our study are characterized by non-normal distribution. The positive sign of the skewness coefficients indicate that all variable is skewed to the right and it is far from being symmetric for all indicators. Also, the Kurtosis coefficients prove that the leptokurtic for all variables used in this study find the presence of a high peak or a fat-tailed in their volatilities.

Based on the estimate Jarque-Bera coefficients, we can reject the null hypothesis of normal distribution of the variables used in our study. Then, the elevated value of Jarque-Bera coefficients indicates that the series is not normally distributed at the level of 1%.

Finally, and Based on the three statistics; skewness, kurtosis and Jarque-Bera, we can assume that all indicators utilized in this study are not normally distributed at the level of 1%.

Then, we analyze the correlation between all used indicators. Furthermore, Table 3 summarizes the estimation coefficients of the Pearson correlation matrix between all variables utilized in this study. The findings shown in this table find that all estimating coefficients are inferior to the tolerance threshold of Pearson (0.7), which does not produce problems in estimating the two equations.

Since we do not have a correlation problem, in this case we can persist our investigation which is founded on a set of econometric tests and estimates.

The study of the influence of internal factors and external factors on the performance of UK insurance companies requires stationarity tests to determine the order of integration of each series. The results of the Levin-Lin-Shu test applied to the used variables are shown in Table 4 for the case of UK insurance companies.

Thus, the acceptance or rejection of the null hypothesis of the test is based on the value of the probabilities and statistics relating to the indicated test. These probabilities are compared to a 10% threshold. If these probabilities are less than 10%, then we reject the null hypothesis and if these probabilities are greater than 10%, then we accept the null hypothesis.

For our case and according to the findings presented in table 4, we show that all utilized variables are stationary in level according to the Levin-Lin-Shu test. Thereafter, all the variables are stationary in level based on the unit root test. So, all the variables are not integrated, and we can use linear regression in our study.

Kurtosis	7.675	3.697	2.900	2.514	5.865	2.521	1.387	5.807	3.689	2.404
Jarque-Bera	52.280	36.207	21.091	46.498	85.011	66.341	41.219	35.320	81.856	58.114
Probability	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*	0.000*
Observations	380	380	380	380	380	380	380	380	380	380

Note: This table reports the descriptive statistics of all indicators used in this paper. We employ annually data for UK insurance companies during the period from 2000 to 2018. Statistical implication at the threshold level of 1 percent is denoted by \*.

Source: Own elaboration.

**Table 3. Correlation matrix.**

	ROA	ROE	SF	LIQ	LEV	AST	GDP	CPI	INT	WTI
ROA	1									
ROE	0.809									
SF	0.015	-0.022								
LIQ	-0.048	0.129	0.059							
LEV	-0.443	-0.617	0.121	0.455						
AST	-0.247	-0.291	0.038	0.324	0.515					
GDP	0.318	0.324	-0.021	0.138	-0.082	0.181				
CPI	0.037	0.021	-0.136	-0.421	-0.326	-0.211	-0.225			
INT	-0.064	0.053	0.048	0.049	0.150	0.077	-0.096	-0.168		
WTI	0.072	0.198	-0.204	0.088	-0.382	0.270	0.276	-0.274	-0.113	1

Note: This table recapitulates the estimated coefficients of correlation between all indicators. We use annually data for UK insurance companies during the period of study through 2000 to 2018.

Source: Own elaboration.

**Table 4. Unit root test.**

Variables	Levin, Lin and Chu Test	
	t-statistic	p-value
ROA	-10.61050	0.0000*
ROE	-12.80534	0.0000*
SF	-9.066631	0.0000*
LIQ	-10.09034	0.0000*
LEV	-9.602106	0.0000*
AST	-9.090188	0.0000*
GDP	-10.31033	0.0000*
CPI	-8.675164	0.0000*
INT	-8.771808	0.0000*
WTI	-9.807344	0.0000*

Note: This table recapitulates the results of stationary test. In this test the calculate p-value is compared to 10%. If the calculate p-value <10% therefore, we refuse the hypothesis H0 and if the calculate p-value > 10% then we accept the hypothesis H0. With the hypothesis H0: all variables are non-stationary. Statistical meaning at 1% is presented by (\*).

Source: Own elaboration

## 5. EMPIRICAL RESULTS

In this section, we present and analyze the empirical findings of our study. First, the number of the observations is limited to 380 observations concerning the two used models. The we employ ROA and ROE indicators as dependent variables to

assess the performance of 20 UK insurance companies during the period of study from 2000 to 2018.

The problem through the estimation it is the selection of the technique of estimation. So, the approached answer of this category of dilemma it is the Hausman test that acknowledg-

es selecting amongst the estimation of a model with fixed effects or the estimation of a model with random effects. If the probability of this test ( $\text{Prob} > \chi^2$ ) is superior to 5% then the model with random effects is preferred to the model with fixed effects. Thus, If the probability of this test ( $\text{Prob} > \chi^2$ ) is inferior to 5% then the model with fixed effects is preferred to the model with random effects. The results of this test are presented in Table 5 and Table 6.

From the Hausman test, we can confirm that the model with random effects is preferred to the model with fixed effects for the two models ROA ( $0.3437 > 5\%$ ) and ROE ( $0.4128 > 5\%$ ).

To pursue our study, we estimate the variables ROA and ROE which measures the performance of UK insurance firms (Table 5 and Table 6). So, we estimate the two indicators by basing itself on 1 estimation for each of both variables. The test of significance of the two used estimations is founded on the likelihood of Fisher. We remark that all the values of the likelihood of Fisher are inferior than 5% in all the models of both estimations Return on Assets (0.0000) and Return on Equity (0.0000). Consequently, we can assume that the quality of every estimation are generally significant and important. From this Table, we find that the coefficients of determination for the two estimates are greater than 0.6, therefore, the two estimates are characterized by a good linear fit (R squared for ROA is equal to 0.8564 and R squared for ROE is equal to 0.9256).

By watching Table 5 which recapitulates all estimations relative to the first model (ROA), we find that there are seven significant variables with different thresholds; 4 internal factors (SF, LIQ, LEV and AST) and 3 external factors (GDP, CPI and INT). The first one, it is the variable Size of Firm (SF), is statistically significant and positive in a 1% threshold. In this frame, the Size of Firm has a positive impact on the economic profitability of the UK insurances companies. This result indicates that the increasing of the size of the insurance firms affect positively their performance.

Then, the liquidity ratio has a positive and significant impact on the performance of the UK insurance companies in a level 5%. Then, if the liquidity ratio augment by 5 units the performance of UK insurance firms increases by 0.011 units. The third internal factor (LEV) has a negative and significant effect on the economic performance of UK insurance firms in a level of 1%. Then, if the leverage ratio of each insurance firm increases by 1 unit, the performance decreases by 0.002 units. Finally, the last internal factor (Asset Turnover) negatively influences the economic performance of UK insurance companies in a level of 5%. So, if the revenue or sales of the company generated relative value of assets increase by 5 units, then the performance of the company decreases by 0.077 units.

For the external factors, we show that the Gross domestic product has a positive and significant impact on the performance of UK insurance firms in a level of 1%. Then, if the GDP raises by 1 unit, the performance increases by 1.136 units. This result confirms the importance of the economic situation of each country and its impacts on the financial institutions. Furthermore, the Consumer price index influence positively and considerably the profitability of the

United Kingdom insurance organizations in a point of 1%. Finally, the interest rate has a negative impact on the economic performance of the UK insurance companies in a threshold of 5%. Therefore, if the interest level grows by five units the performing of an enterprise declines by 0.201 units.

By observing Table 6 which summarizes the estimation of the second model (ROE), we find that there are seven significant variables with different thresholds; 3 internal factors (LIQ, LEV and AST) and 4 external factors (GDP, CPI, INT and WTI).

For the internal factors, we show the same impact of these variables on the financial performance of UK insurance companies (ROE). Then, the liquidity ratio has a positive and significant impact on performance of the UK insurance companies. However, the leverage ratio and the asset turnover have a negative impact on the performance of the UK insurance companies.

For the external factors, we show that all these variables have a positive impact on the financial performance of the UK insurance companies. We focus only the impact of the WTI which reflect the dependence between the insurance industry and the financial market, especially, the volatility of the WTI index.

Founded on the preceding conclusions, the United Kingdom insurance enterprises should improve their size and liquidity percentage and decline their leverage percentage and asset turnover to strengthen their productivity. Also, they can investigate on the positive impact of the external factors such as GDP, CPI, INT and WTI.

**Table 5. Estimation Results for ROA indicators**

Independent Variables	Coefficients	t-student
SF	0.108*** (0.000)	8.24
LIQ	0.011** (0.039)	2.19
LEV	-0.002*** (0.000)	-7.07
AST	-0.077** (0.022)	-2.32
GDP	1.136*** (0.000)	5.44
CPI	0.017*** (0.006)	2.78
INT	-0.201** (0.015)	-2.46
WTI	0.006 (0.104)	1.64
R squared	0.8564	

Adjusted R squared	0.7962
F statistics	7.16
Prob (F statistics)	0.0000
The probability of Hausman test	Prob>chi2 = 0.3437
Type of selected regression	Model with random effects
Note: ***, ** and * correspond to significance levels of 1%, 5% and 10%. Values between parentheses present p-value.	

Source: Own elaboration

**Table 6. Estimation Results for ROE indicators.**

Independent Variables	Coefficients	t-student
SF	0.009 (0.521)	0.39
LIQ	4.251*** (0.000)	9.11
LEV	-0.002*** (0.651)	-8.45
AST	-2.041*** (0.000)	-6.81
GDP	6.002*** (0.000)	11.01
CPI	4.001*** (0.000)	8.48
INT	0.011*** (0.938)	6.07
WTI	0.003*** (0.000)	5.09
R squared	0.9256	
Adjusted R squared	0.8653	
F statistics	8.25	
Prob (F statistics)	0.0000	
The probability of Hausman test	Prob>chi2 = 0.4128	
Type of selected regression	Model with random effects	
Note: ***, ** and * correspond to significance levels of 1%, 5% and 10%. Values between parentheses present p-value.		

Source: Own elaboration

## 6. CONCLUSION

At the level of this paper, we have attempted to verify the factors that can affect the performance of UK insurance

companies during the period 2000-2018. The interpretation of the empirical findings has authorized us to know that the internal factors used in this study (Size of firm, liquidity, leverage, and asset turnover) are determinant of the performance of UK insurance companies. Then, we show that the size of firm and the liquidity ratio has a positive and significant impact on performance of the UK insurance companies. However, the leverage ratio and the asset turnover have a negative effect on the performance of the UK insurance companies.

However, we show that the external factors (GDP, CPI, interest rate and WTI) have a positive on the performance of the UK insurance companies. These factors can gain competitive advantage and safety and then insurance industry achieve highest profitability in United Kingdom.

The purpose of the assessment of performance is to discover the strengths and weaknesses of insurance companies, based on an empirical investigation, which in the end will allow us to draw up a statement on the performance of the company in based on internal and external indicators. Furthermore, we can utilize another measure of performance to analyze the most important factors of the efficiency of the UK insurance companies.

These empirical results will be beneficial for insurance enterprises, authority, policymakers, and investors in getting decision and increasing the profitability of their organizations.

For future paper, the research suggested that, this paper and its empirical results are employed only on insurance industry rather than others. The internal and external determinants are limited. For future research, the number of factors can be raises. Additionally, little numbers of insurance company are selected in this paper due to accessibility of data. So, the future investigations performed study on bigger number of insurance firms.

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## CONFLICT OF INTEREST STATEMENT

The authors declare that they have no conflict of interest.

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