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Measuring the Impact of Financial Risks on The Financial Performance of Property and Casualty Insurance Companies in the Egyptian Insurance Market Using A Panel Data Regression Analysis

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ABSTRACT

This Study aimed to measure the Impact of Financial Risks on The Financial Performance of Property and Casualty Insurance Companies in The Egyptian Insurance Market. Solvency Risk (Solv R), Credit Risk (Cre R), Underwriting Risk (UR), Operational Risk (Opera R), Reinsurance Risk (Rei R) and Liquidity Risk (Liq R) (Independent Variables) have an Impact on each Return on Assets (ROA) and Return on Equity (ROE) as measures used for The Financial Performance of Property and Casualty Insurance Companies in The Egyptian Insurance Market (Dependent Variables). This Study used a Panel Data Regression Analysis with one Stage Model Estimation Approach Hausman-Test to Estimate the Proper Regression model of The Pooled Regression Model (Common Effect Model), Fixed Effect Model or Random Effect Model. The most Fit Regression Model Analysis to be Selected is Fixed Effect Model. The Secondary Data were also obtained from the annual Statistical book issued by the Egyptian General Authority for Financial Supervision, which was applied to Six of Property and Casualty Insurance Companies in The Egyptian Insurance Market, Including Public Company, as Follow: (Misr Insurance Company) and Private Companies, represented in the Following (Suez Canal – Eng. – Delta – AIG – GIG), From 2010/2011 to 2021/2022. Finding Showed for the Panel Data Regression Model, Solvency Risk (Solv1 R), Operational Risk (Opera R), Underwriting Risk (UR) and Credit Risk (Cre1 R) have negative impact on The Return on Assets (ROA). Also Reinsurance Risk (Rei R) and Liquidity Risk (Liq R) have positive impact on The Return on Assets (ROA). Also Solvency Risk (Solv1 R), Operational Risk (Opera R), Reinsurance Risk (Rei R) and Liquidity Risk (Liq R) have a significant Impact on The Return on Assets (ROA). Also Underwriting Risk (UR) and Credit Risk (Cre1 R) have no significant Impact on The Return on Assets (ROA). But, Solvency Risk (Solv2 R), Underwriting Risk (UR) and Credit Risk (Cre2 R) have negative impact on The Return on Equity (ROE). Also Operational Risk (Opera R), Reinsurance Risk (Rei R) and Liquidity Risk (Liq R) have positive impact on The Return on Equity (ROE). Also Solvency Risk (Solv2 R), Underwriting Risk (UR) and Reinsurance Risk (Rei R) have a significant Impact on The Return on Equity (ROE). Also Operational Risk (Opera R), Credit Risk (Cre2 R) and Liquidity Risk (Liq R) have no significant Impact on The Return on Equity (ROE). Finally, this study Recommended that The Insurance Companies should be Designed a Program to Secured the Company's Information so that it Protected that Information from any Expected Threats or Risks, and also recommended all Companies Operating in the Egyptian Insurance Market should be quickly adopted the Establishment and activation of specialized risk management departments and support them modern technical models in order to maintain the strength and stability of the Egyptian Insurance Sector.

1. Introduction

The Insurance Sector is one of the basic Elements and Components of any modern Economic System in the World, and the Importance of the Insurance

Sector Lies in its ability to provide Economic Protection to Individuals, Economic and Commercial Institutions through Financial

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Compensation for Losses Resulting from the Occurrence of Specific Risks that are Insured against, and thus Ensures the Continuation of Institutions and Projects in The Performance of their work which reflects on them Positively **(Franklin & Richard,2021)**.

The Insurance Sector Plays an Important role in the Financial Services Sector, as it Contributes to achieving Economic Growth, Efficient Allocation of available Resources, Reducing the Costs of Insurance Operations, Creating Sufficient Liquidity, and Facilitating Investment Operations **(Jeungbo ,2020)**.

In Light of the Economic Development and the Complexity of its Operations, any Economy Cannot Progress and Develop without the Existence of a Strong and Developed Insurance Sector Capable of meeting the needs and Requirements of all Parties that need Insurance Operations.

Therefore, Insurance Companies Seek to reduce Risks and Search for the best methods and the lowest Possible Costs in order to avoid the Occurrence of Risks and limit the Effects of Risks in the Event of their Occurrence.

Financial Risks are among the main Problems faced by Insurance Companies, and the Evaluation of these Companies Depends on market conditions, and due to the Continuous Developments in the Financial Sector, Insurance Companies, like other Financial Institutions, seek to Improve their Performance and Increase their Profitability, which helps them to Grow and Continuity to Face Economic Risks **(Sundus, 2020)**.

Through this, Financial Performance is Considered the main axis for measuring Performance in Insurance Companies because of its almost Importance in Knowing the Extent of the Company's ability to achieve its goals in the short and long term **(Oyerogba & Gbolagade,2023)**.

Where the Insurance Companies Enhance the Competitiveness at the Local and External Levels, by Carrying out their Obligations towards the Policyholders, and this is done through the Sums that have been Collected in the Form of Premiums and the Formation of Reserve to Enhance the Financial Solvency, which leads to Improving the

Financial Performance of the Insurance Companies and their Continuity and Survival in the market **(Fanny Septina ,2022)**.

2. Literature Review

- **(Sundus et al.,2020)**, This aim of this study to shed some light of the effect of risk factors on the financial performance of insurance companies listed at Kuwait stock exchange (KSE) period 2009-2017. The research uses credit, operational and liquidity risk as independent variables and return on assets (ROA) and return on equity (ROE) as dependent variables. Results obtained from this study showed that the financial performance of Kuwaiti insurance companies are mostly affected by operational risk and credit risk while liquidity risk does not have any statistical significant effect on their financial performance. This aim of this study to shed some light of the effect of risk factors on the financial performance of insurance companies listed at Kuwait stock exchange (KSE) over the period 2009-2017. The research uses credit, operational and liquidity risk as independent variables and return on assets (ROA) and return on equity (ROE) as dependent variables. Results obtained from this study showed that the financial performance of Kuwaiti insurance companies are mostly affected by operational risk and credit risk while liquidity risk does not have any statistical significant effect on their financial performance.

- **(Olawale et al.,2022)**, management theory and resources dependence theory to establish conceptual relationship between the variable. The population of the study comprised of the 30 listed insurance firms in Nigeria and 26 adjusted populations was arrive based on availability of data. The data collected were analyzed with the aid of paneled regression. The findings revealed that solvency risk and underwriting risk have negative and significant relationship with financial performance of listed insurance firms. Based on the findings, the study recommends that Insurance firms should offer adequate diversification of insurance policy portfolio to have better premium earning that can compensate other loss when it's occurred. Hence, insurance companies should give due attention on these areas to reduce the effect of underwriting risk for their performance and should also strive to attract more customers and boost their income through

provision of enhanced estimation technique on insurance policy premium price to maximize their net premium earning and net asset. Since the country is growing and transforming into the age of industry with the existing paid up capital, it will be likely for insurance companies to face solvency risk.

-(Yohanna et al., 2022), The purpose of this paper was to examine some of the financial risk variables that affect the profitability of Non-life insurance companies listed on Nigerian Stock Exchange. A panel research design was employed for the purpose of this study. The reason for employing this design was because the study has to do with secondary data that cut across a large population and have occurred at different point in time. This was considered suitable and appropriate for a study on Non-life insurance companies that have similar characteristics. The data was collected and analyzed after which the study established that financial risks affect the profitability of Non-life insurance companies in Nigeria. Specifically, solvency risk, leverage risk, and reinsurance risk affected the profitability (ROA) of Non-life insurance companies in Nigeria between 2008-2018. While affiliated investment risk and firm size risk did not affect the profitability of insurance companies within that same period. The findings indicated a number of implications for both the owners of insurance companies as well as the regulators of the industry. Insurance companies are saddled with the responsibility of mitigating all sort of risks that are faced by individuals and organizations hence, owners of insurance companies should pay careful and particular attention to those financial risk variables that are likely to affect their own corporate profitability. The regulators of the insurance industry in Nigeria should formulate policies that will help in enhancing the profitability of the insurance industry.

- (Ezekiel & Adekola ,2023), This study examined the impact of risk management on the financial performance of listed insurance companies in Nigeria. The study specifically examined the extent to which operational risk and liquidity risk influence the return on asset of listed insurance companies in Nigeria. A sample size of the 25 listed insurance companies was selected which is equally the population of the study. The

study made use of secondary data. The data were obtained from the annual reports of the insurance companies and Nigeria Stock Exchange (NSE) fact book from the year 2011-2017. Data collected was analyzed using descriptive and inferential statistics. The descriptive statistics used include meaning, standard deviation, minimum and maximum values while the inferential statistics used were Pearson movement correlation coefficient and multiple linear regression analysis. The result of the correlation analysis revealed that all the variables have a relationship with each other. Also, the results of regression analysis revealed that operational risk positively influenced the financial performance of listed insurance companies with a coefficient of 0.0316899 and a p-value of 0.0000 significant at 5%. Similarly, liquidity risk also showed a positive influence on the financial performance of listed insurance companies with a coefficient of 0.0123241 and a p value of 0.010. Therefore, the study concluded that risk management significantly influenced the financial performance of listed insurance companies in Nigeria.

Research Gap: The Current Study Dealt with Measuring the impact of Financial Risks on The Financial Performance of Property and Casualty Insurance Companies in The Egyptian Insurance Market During the Period **2010/2011 to 2021/2022**, and The Most Important Thing That Distinguishes This Current Study from Previous Studies is that it Included all the Risks that Insurance Companies Are Exposed to in the Egyptian Insurance Market , which are Represented in the Following (Solvency Risk , Credit Risk , Underwriting Risk , Operational Risk , Liquidity Risk and Reinsurance Risk) , but Previous Studies Focused on Some Risks only.

3. Research Problem

Insurance Companies are Exposed to a variety of Risks in terms of their Sources, Effects and Methods of Dealing with them, which could threaten the ability of these Companies to achieve their Goals Related to Growth and Profitability or threaten their Continuity, as they Included Solvency Risk, Credit Risk, Underwriting Risk, Operational Risk, Liquidity Risk and Reinsurance Risk. The Financial Performance of Insurance Companies has become a necessity to verify the Impact of these Risks.

Table (1) Shows the Financial Risks of the Property and Casualty Insurance Companies under Study in the Egyptian Insurance market during the Period 2010/2011 to 2021/2022

Years	Misr Insurance						Suez Canal					
	Solv R	Cre R	UR	Opera R	Liq R	Rei R	Solv R	Cre R	UR	Opera R	Liq R	Rei R
2010/2011	6.76	3.42	8.69	9.13	22.6	11.4	7.03	16.4	5.30	11.4	18.4	34.9
2011/2012	7.16	2.75	8.07	8.08	26.6	13.4	8.33	13.5	5.26	9.7	18.4	29.6
2012/2013	7.30	3.12	7.38	8.94	24.2	16.6	9.92	7.55	5.21	8.87	20.2	23.7
2013/2014	6.83	2.46	5.97	1.55	28.9	14.3	7.97	8.14	4.56	7.67	18.6	22.5
2014/2015	5.92	2.72	5.65	7.86	26.9	12.3	6.21	8.27	4.32	9.04	17.3	22.4
2015/2016	5.49	2.88	5.31	7.87	25.8	11.4	4.86	8.31	4.55	9.13	16.9	25.5
2016/2017	7.19	1.04	4.53	6.48	49.1	8.01	4.42	8.56	4.48	9.22	14.4	32.4
2017/2018	6.91	9.07	4.92	8.53	52.4	9.26	4.25	8.49	3.77	9.08	15.1	31.4
2018/2019	5.84	1.06	5.29	8.12	48.6	9.3	6.86	8.35	3.41	8.77	22.9	28.3
2019/2020	7.03	1.28	5.03	7.52	43.8	14.2	9.13	8.41	3.83	9.20	26.8	28.2
2020/2021	7.25	1.01	5.05	7.71	49.8	11.4	5.13	8.38	3.58	9.59	16.2	27.3
2021/2022	7.49	9.77	4.87	6.23	50.6	9.76	6.36	8.30	3.56	9.66	17.3	30.2

Source: Statistical Yearbook on Egyptian Insurance Market Activity

The Following is Evident from the Previous: -

- For Misr Insurance Company: -

- **The Solvency Risk Ratio (Solv R)** Represents in the year 2021/2022, with a value of 7.49%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2015/2016, when its value reached 5.49%, and this ratio for the rest of the years, this percentage for the rest of the years fluctuated up and down, which effects the volatility of Financial Performance.
- **The Credit Risk Ratio (Cre R)** Represents 9.77% in 2021/2022, and 9.07% in 2017/2018, meaning that they represent the highest risk ratio for the rest of the other years, then it decreased in 2020/2021, when it reached 1.01%, and also in

2016/2017 its value amounted to 1.04%, and in 2018/2019 it amounted to 1.06%. For the rest of the years, this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Underwriting Risk Ratio (UR)** Represents 8.69% in 2010/2011, and 8.07% in 2011/2012, meaning that they represent the highest risk ratio in relation to the rest of the other years. then it decreased in 2016/2017 amounted to 4.53%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Operational Risk Ratio (Opera R)** Represents in the year 2010/2011, when its value reached 9.13%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2013/2014, when its value

reached 1.55%, and this percentage for the rest of the years, this ratio Fluctuated up and down, which effects the volatility of financial Performance.

- **The Liquidity Risk Ratio (Liq R)** Represents 52.4% in 2017/2018, and 50.6% in 2021/2022, meaning that they represent the highest risk ratio for the rest of the years, then it decreased in 2010/2011, when it reached 22.6%. The years Fluctuate up and down, which effects the volatility of financial Performance.

- **The Reinsurance Risk Ratio (Rei R)** Represents in the year 2012/2013, when its value reached 16.6%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2016/2017, when its value reached 8.01%, and this ratio for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- For Suez Canal Company: -

- **The Solvency Risk Ratio (Solv R)** Represents in the year 2012/2013, when its value reached 9.92%, meaning that it is the highest risk ratio for the rest of the other years, then it decreased in 2017/2018, when its value reached 4.25%, and this ratio for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Credit Risk Ratio (Cre R)** Represents in the year 2010/2011, when it amounted to 16.4%, and also the year 2011/2012, with a value of 13.5%, meaning that they represent the highest risk ratio in relation to the rest of the other years, then it decreased in 2012/2013, when its value amounted to 7.55%. and this ratio for the rest of

the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Underwriting Risk Ratio (UR)** Represents 5.30% in 2010/2011, 5.26% in 2011/2012 and 5.21% in 2012 /2013, meaning that they represent the highest risk ratio for the rest of the other years, then it decreased in 2018/2019 as its value reached 3.41%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Operational Risk Ratio (Opera R)** Represents in the year 2010/2011, when its value reached 11.4%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2013/2014, when its value amounted to 7.67%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Liquidity Risk Ratio (Liq R)** Represents in the year 2019/2020, with a value of 26.8%, and also the year 2018/2019 with a value of 22.9%, as well as the year 2012/2013 with a value of 20.2%, meaning that they represent the highest risk ratio for the rest of the other years, then it decreased in 2016/2017, where it amounted to 14.4%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Reinsurance Risk Ratio (Rei R)** Represents in the year 2010/2011, with a value of 34.9%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2014/2015, when its value amounted to 22.4%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

Table (2) Shows the Financial Risks of the Property and Casualty Insurance Companies under Study in the Egyptian Insurance market during the Period 2010/2011 to 2021/2022

Years	Eng.						Delta					
	Solv R	Cre R	UR	Opera R	Liq R	Rei R	Solv R	Cre R	UR	Opera R	Liq R	Rei R
2010/2011	6.75	7.05	6.04	8.33	27.3	11.2	3.86	6.42	5.26	8.91	35.4	24.3
2011/2012	6.03	6.73	5.73	8.45	29.1	12.1	3.91	6.22	5.56	8.20	33.7	25.6
2012/2013	5.22	6.89	4.55	9.45	31.2	12.7	3.56	6.18	5.43	8.71	33.1	19.6
2013/2014	5.64	6.93	5.45	8.90	28.4	11.4	3.44	6.22	5.28	8.15	37.8	19.3
2014/2015	4.91	6.65	5.09	8.77	33.5	13.5	3.70	6.37	5.28	8.41	36.3	17.2
2015/2016	4.26	6.44	4.11	7.88	35.8	16.6	3.37	6.27	4.88	8.61	37.3	18.3
2016/2017	4.31	6.68	3.79	7.83	33.2	16.1	3.69	5.68	4.55	7.33	43.2	14.9
2017/2018	4.57	6.65	3.29	7.54	33.5	25.4	2.91	5.44	4.52	8.02	45.6	15.3
2018/2019	4.61	6.79	3.45	7.43	32.1	29.5	2.66	5.33	3.48	8.04	46.7	16.6
2019/2020	4.77	6.64	3.71	7.15	33.6	26.9	2.54	5.46	3.78	7.86	45.4	18.6
2020/2021	4.43	6.44	3.46	7.65	35.5	26.7	2.29	5.13	5.48	7.74	48.8	18.9
2021/2022	4.19	6.32	2.87	7.69	36.8	31.3	2.33	5.11	5.85	8.13	48.9	21.9

Source: Statistical Yearbook on Egyptian Insurance Market Activity

The Following is Evident from the Previous: -

- For Eng. Company: -

- **The Solvency Risk Ratio (Solv R)** Represents in the year 2010/2011, when it amounted to 6.75%, and also the year 2011/2012, with a value of 6.03%, meaning that the represent the highest risk ratio in relation to the rest of the other years, then it decreased in 2021/2022, when its value amounted to 4.19%. and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.
- **The Credit Risk Ratio (Cre R)** Represents in the year 2010/2011, when its value reached 7.05%, meaning that it represents the highest risk ratio for the rest of the other years, then it

decreased in 2021/2022, when it reached 6.32%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Underwriting Risk Ratio (UR)** Represents in the year 2010/2011, when it amounted to 6.04%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2021/2022, when it reached 2.87%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.
- **The Operational Risk Ratio (Opera R)** Represents in the year 2012/2013, when its value amounted to 9.45%, meaning that it represented the highest risk ratio for the rest of the other years, then it decreased in 2019/2020, when its value reached 7.15%, and this percentage for the

rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Liquidity Risk Ratio (Liq R)** Represents in the year 2021/2022, with a value of 36.8%, as it is the highest risk ratio for the rest of the other years, then it decreased in 2010/2011, with a value of 27.3%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Reinsurance Risk Ratio (Rei R)** Represents in the year 2021/2022, with a value of 31.3%, as it represents the highest risk ratio for the rest of the other years, then it decreased in 2010/2011, when its value amounted to 11.2%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- For Delta Company: -

- **The Solvency Risk Ratio (Solv R)** Represents in the year 2011/2012, when its value reached 3.91%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2020/2021, when its value reached 2.29%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Credit Risk Ratio (Cre R)** Represents in the year 2010/2011, when its value reached 6.42%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2021/2022, when its value reached 5.11%, and this percentage for the rest of the

years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Underwriting Risk Ratio (UR)** Represents in the year 2021/2022, with a value of 5.85%, meaning that it is the highest risk ratio for the rest of the other years, then it decreased in 2018/2019, with a value of 3.48%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Operational Risk Ratio (Opera R)** Represents in the year 2010/2011, when its value reached 8.91%, meaning that it is the highest risk ratio for the rest of the other year, then it decreased in 2016/2017, when its value reached 7.33%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Liquidity Risk Ratio (Liq R)** Represents in the year 2021/2022, when its value reached 48.9%, meaning that it is the highest risk ratio for the rest of the other years, then it decreased in 2012/2013, when its value reached 33.1%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Reinsurance Risk Ratio (Rei R)** Represents in the year 2011/2012, when its value reached 25.6%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2016/2017, when its value amounted to 14.9%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

Table (3) Shows the Financial Risks of the Property and Casualty Insurance Companies under Study in the Egyptian Insurance market during the Period 2010/2011 to 2021/2022

Years	AIG						GIG					
	Solv R	Cre R	UR	Opera R	Liq R	Rei R	Solv R	Cre R	UR	Opera R	Liq R	Rei R
2010/2011	4.26	8.15	5.22	1.02	18.5	24.1	2.87	6.75	5.04	8.30	32.5	39.3
2011/2012	3.06	7.34	5.49	9.43	26.6	29.4	3.12	7.69	4.53	7.65	33.1	34.8
2012/2013	2.93	7.13	4.09	9.31	28.7	29.7	3.55	5.94	4.82	7.84	30.6	31.9
2013/2014	3.19	6.76	4.15	8.14	32.4	25.9	3.35	5.43	4.72	6.17	35.7	28.9
2014/2015	6.14	6.25	7.19	8.87	37.5	42.6	3.24	6.11	4.66	5.21	38.9	29.3
2015/2016	10.2	6.24	4.57	7.72	37.6	31.7	3.26	4.29	3.58	7.30	37.1	32.7
2016/2017	5.85	7.15	2.29	1.03	28.5	22.9	3.61	5.59	2.88	6.40	34.1	40.1
2017/2018	11.7	7.08	8.45	1.08	29.2	23.9	3.72	6.53	4.29	5.42	34.7	43.1
2018/2019	9.89	6.53	2.84	6.42	34.7	20.1	3.87	4.25	5.57	7.11	37.5	43.3
2019/2020	10.2	6.14	2.63	7.58	38.6	18.6	3.73	7.32	5.09	5.33	36.8	45.3
2020/2021	17.2	5.52	3.15	3.59	44.8	17.1	3.54	6.39	4.76	6.52	36.1	36.9
2021/2022	9.35	5.22	5.17	6.09	47.8	42.1	3.19	8.85	6.91	8.73	31.5	45.6

Source: Statistical Yearbook on Egyptian Insurance Market Activity

The Following is Evident from the Previous: -

- For AIG Company: -

- **The Solvency Risk Ratio (Solv R)** Represents in the year 2020/2021, when its value reached 17.2%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2012/2013, when its value reached 2.93%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.
- **The Credit Risk Ratio (Cre R)** Represents in the year 2010/2011, when its value reached 8.15%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2021/2022, when its value reached 5.22%, and this percentage for the rest of the

years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Underwriting Risk Ratio (UR)** Represents in the year 2017/2018, as it amounted to 8.45%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2016/2017, when it reached 2.29%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.
- **The operational Risk Ratio (Opera R)** Represents 9.43% in the year 2011/2012, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2010/2011, when it reached 1.02%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Liquidity Risk Ratio (Liq R)** Represents in the year 2021/2022, when its value reached 47.8%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2010/2011, when its value reached 18.5%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Reinsurance Risk Ratio (Rei R)** Represents in the year 2014/2015, when it amounted to 42.6%, and also the year 2021/2022, when it reached 42.1%, meaning that they represent the highest risk ratio for the rest of the other years, then it decreased in 2020/2021, when its value reached 17.1%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- For GIG Company: -

- **The Solvency Risk Ratio (Solv R)** Represents in the year 2018/2019, with a value of 3.87%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2010/2011, when its value amounted to 2.87%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Credit Risk Ratio (Cre R)** Represents in the year 2021/2022, with a value of 8.85%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2018/2019, when it amounted to 4.25%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Underwriting Risk Ratio (UR)** Represents in the year 2021/2022, as its value reached 6.91%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2016/2017, when its value reached 2.88%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Operational Risk Ratio (Opera R)** Represents in the year 2021/2022, when its value reached 8.73%, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2014/2015, when its value reached 5.21%, and this percentage for the rest of

the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Liquidity Risk Ratio (Liq R)** Represents 38.9% in 2014/2015, meaning that it represents the highest risk ratio for the rest of the other years, then it decreased in 2012/2013, when it reached 30.6%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

- **The Reinsurance Risk Ratio (Rei R)** Represents in the year 2021/2022, when it amounted to 45.6% and also in the year 2019/2020, when it reached 45.3%, meaning that they represent the highest risk ratio in relation to the rest of the other years, then it decreased in 2013/2014, when its value amounted to 28.9% and also in 2014/2015, its value reached 29.3%, and this percentage for the rest of the years Fluctuated up and down, which effects the volatility of financial Performance.

Therefore, The Research Question Problem can be Formulated as Follows:

" What is the impact of Financial Risks on the Financial Performance of Property and Casualty Insurance Companies in the Egyptian Insurance Market? "

Consequently, Several Sub-Questions Emerge from it:

- What is the impact of **Solvency Risk (Solv R)** on each Return on Assets (ROA) and Return on Equity(ROE)?

- What is the impact of **Credit Risk (Cre R)** on each Return on Assets (ROA) and return on Equity(ROE)?

- What is the impact of **Underwriting Risk (UR)** on each Return on Assets(ROA) and Return on Equity(ROE)?

- What is the impact of **Operational Risk (Opera R)** on each Return on Assets (ROA) and Return on Equity(ROE)?

- What is the impact of **Liquidity Risk (Liq R)** on each Return on Assets(ROA) and Return on Equity(ROE)?

- What is the impact of **Reinsurance Risk (Rei R)** on each Return on Assets(ROA) and Return on Equity(ROE)?

4. Importance of Research

Insurance Companies play an Important role in the Egyptian National Economy, and the Performance of these Companies Represents a Fundamental Pillar for other Sectors and Society, and according to the Insurance Services they provide to various Sectors and Individuals, which Enable them to overcome the Risks they are Exposed to.

The Importance of this study is derived from the Importance of the Existence of Insurance Companies and The Importance of Risk Management in them. It also helps Insurance Companies to develop a measure of their Financial Performance, in addition to Identifying Financial Risks that effect the Performance of Insurance Companies.

Therefore, this study of these Risks is considered Important because of the results presented by this study that can be used to improve the performance of companies and reduce the risks effecting them.

5. Objective of Research

The main Objective of this Study is to measure the Impact of Financial Risks on The Financial Performance of the Property and Casualty Insurance Companies in the Egyptian Insurance Market. Therefore, the Specific Objectives are as Follows:

- Determine The Impact of **Solvency Risk (Solv R)** on each Return on Assets(ROA) and Return on Equity (ROE).
- Determine The Impact of **Credit Risk (Cre R)** on each Return on Assets(ROA) and Return on Equity(ROE).
- Determine The Impact of **Underwriting Risk (UR)** on each Return on Assets(ROA) and Return on Equity(ROE).
- Determine The Impact of **Operational Risk (Opera R)** on each Return on Assets(ROA) and Return on Equity(ROE).

- Determine The Impact of **Liquidity Risk (Liq R)** on each Return on Assets(ROA) and Return on Equity(ROE).
- Determine The Impact of **Reinsurance Risk (Rei R)** on each Return on Assets(ROA) and Return on Equity(ROE).

6. Data and Methodology

This Study used a Panel Data Regression Analysis with one Stage Model Estimation Approach Hausman-Test to Estimate the Proper Regression model of The Pooled Regression Model (Commen Effect Model), Fixed Effect Model or Random Effect Model. The most Fit Regression Model Analysis to be Selected is Fixed Effect Model. The Secondary Data were also obtained from the annual Statistical book issued by the Egyptian General Authority for Financial Supervision, which was applied to Six of Property and Casualty Insurance Companies in The Egyptian Insurance Market, Including Public Company, as Follow: (Misr Insurance Company) and Private Companies, represented in the Following (Suez Canal – Eng. – Delta – AIG –GIG), From 2010/2011 to 2021/2022.

To conduct this study, the Panel Data Analysis technique is used for determining the relationship between Independent and Dependent Variables. Using The Panel Data Regression model method to test the significance of the regression between several Independent variables and Dependent variables, through which we can determine which of the Independent Variables Contributes more to the Dependent Variables. For making this study meaningful and making it frees from error, statistical software is used for calculating the empirical Results. As the Calculation is quite tough, manual calculation is avoided here rather than sophisticated software is used. In this study **Eviews 10.0** Statistics Software has taken for calculating the empirical result. **Eviews 10.0** stands for statistical package for the social science. This is package software containing different tools and techniques for making statistical analysis easy. **So the general model is stated as follows:**

$$Y_{it} = \beta_0 + \beta_1 x_{it,1} + \beta_2 x_{it,2} + \beta_3 x_{it,3} + \beta_4 x_{it,4} + \beta_5 x_{it,5} + \beta_6 x_{it,6} + \epsilon_{it}$$

$$\begin{aligned} \text{ROA} &= f(\text{Solv}_1 \text{ R}, \text{Cre}_1 \text{ R}, \text{UR}, \text{Opera R}, \text{Liq R}, \text{Rei R}) \\ \text{ROA}_{it} &= \beta_0 + \beta_1 \text{Solv}_1 \text{ R}_{it,1} + \beta_2 \text{Cre}_1 \text{ R}_{it,2} + \beta_3 \text{UR}_{it,3} + \beta_4 \text{Opera R}_{it,4} + \beta_5 \text{Liq R}_{it,5} \\ &\quad + \beta_6 \text{Rei R}_{it,6} + \epsilon_{it} \end{aligned}$$

$$\begin{aligned} \text{ROE} &= f(\text{Solv}_2 \text{ R}, \text{Cre}_2 \text{ R}, \text{UR}, \text{Opera R}, \text{Liq R}, \text{Rei R}) \\ \text{ROE}_{it} &= \beta_0 + \beta_1 \text{Solv}_2 \text{ R}_{it,1} + \beta_2 \text{Cre}_2 \text{ R}_{it,2} + \beta_3 \text{UR}_{it,3} + \beta_4 \text{Opera R}_{it,4} + \beta_5 \text{Liq R}_{it,5} \\ &\quad + \beta_6 \text{Rei R}_{it,6} + \epsilon_{it} \end{aligned}$$

Notes: -

i = Unit of Observation (Six of Property & Casualty of Insurance Companies).

t = Period of Time (2010/2011 to 2021/2022)

β_0 = Intercept

β_k = Coefficient of each Explanatory Variables.

ϵ_{it} = Error Term

ROA_{it} = Return on Assets

ROE_{it} = Return on Equity

$\text{Solv R}_{it,1}$ = Solvency Risk

$\text{Cre R}_{it,2}$ = Credit Risk

$\text{UR}_{it,3}$ = Underwriting Risk

$\text{Opera R}_{it,4}$ = Operational Risk

$\text{Liq R}_{it,5}$ = Liquidity Risk

$\text{Rei R}_{it,6}$ = Reinsurance Risk

Solvency Risk ($\text{Solv}_{1,2} \text{ R}$), Credit Risk ($\text{Cre}_{1,2} \text{ R}$), Underwriting Risk (UR), Operational Risk (Opera R), Liquidity Risk (Liq R) and Reinsurance Risk (Rei R) (**Independent Variables**) have an Impact on each Return on Assets(ROA) and Return on Equity (ROE) (**Dependent Variables**).

Table (4) Shows the variables list of both Dependent and Independent Variables mentioning the full form of the variables with Explanation. It also shows the formula used for determining the Quantitative value of the variables.

Short Form	Full Form	Explanation	Formula
Dependent Variables			
ROA	Return on Assets	Return on Assets is used to assess the ability of Insurance Companies to generate Returns from available Sources of Funds.	Profit after Tax / Total Assets
ROE	Return on Equity	Return on Equity is used to Analysis the return on money Invested by Shareholders.	Profit after Tax / Total Equity
Independent Variables			
Solv R	Solvency Risk	Solvency Risk is defined as the Inability of Companies to Fulfill their obligations in the long term, which leads to bankruptcy of the company.	Two measures of Solvency Risk are used which are the following: $\text{Solv}_1 \text{ R} = \text{Total Assets} / \text{Net Written Premiums}$ $\text{Solv}_2 \text{ R} = \text{Shareholder's Equity} / \text{Net Written Premiums}.$
Cre R	Credit Risk	Credit Risk is defined as the risk of the inability or unwillingness of the other party to the insurance company to fulfill its obligation, which causes a financial loss to the insurance company. Sources of Credit Risk include Investors , Policyholders (through outstanding and Unpaid Premiums) , and Reinsurers.	Two measures of Credit Risk are used which are the following: $\text{Cre}_1 \text{ R} = \text{Total Liabilities} / \text{Total Assets}$ $\text{Cre}_2 \text{ R} = \text{Total Liabilities} / \text{Total Equity's}$
UR	Underwriting Risk	It is the risk Resulting from Exposure to Financial Losses Associated with the Selection and Acceptance of Risks to be Insured.	$\text{UR} = \text{Paid Claims} / \text{Net Written Premiums}$
Opera R	Operational Risk	It is the risks that arise as a result of Inadequate Information Systems, Failure of Internal Processes, People or Systems, or as a result of External Events.	$\text{Opera R} = \text{Gross Operating Expenses} / \text{Total Revenues}$
Liq R	Liquidity Risk	It is the risk that arises as a result of the in ability to fulfill contractual obligations when	$\text{Liq R} = \text{Total Equity} / \text{Total Assets}$

		they fall due to the inability to liquidate assets or obtain sufficient financing without Incurring Unacceptable Losses.	
Rei R	Reinsurance Risk	It is the risk that a rises as a result of the inability of the assigning company or the main insurance company to obtain insurance from the reinsurer in a timely manner and at an appropriate cost.	Rei R = Reinsurance Premiums Issued / Total Assets

Source: Author's Calculation

7. Research Hypothesis

Based on the above, and in the light of the Review of Previous Studies Related to the Subject matter of the study, The Researcher will formulate the Imposition of the current study, which is designed to be tested as follows: -

- H_{1a}: There is no Significant Effect between Solvency Risk (Solv₁ R) and Return on Assets (ROA).
H_{2a}: There is no Significant Effect between Credit Risk (Cre₁ R) and Return on Assets (ROA).
H_{3a}: There is no Significant Effect between Underwriting Risk (UR) and Return on Assets (ROA).
H_{4a}: There is no Significant Effect between Operational Risk (Opera R) and Return on Assets (ROA).
H_{5a}: There is no Significant Effect between Liquidity Risk (Liq R) and Return on Assets (ROA).
H_{6a}: There is no Significant Effect between Reinsurance Risk (Rei R) and Return on Assets (ROA).
H_{1b}: There is no Significant Effect between Solvency Risk (Solv₂ R) and Return on Equity (ROE).
H_{2b}: There is no Significant Effect between Credit Risk (Cre₂ R) and Return on Equity (ROE).
H_{3b}: There is no Significant Effect between Underwriting Risk (UR) and Return on Equity (ROE).
H_{4b}: There is no Significant Effect between Operational Risk (Opera R) and Return on Equity (ROE).
H_{5b}: There is no Significant Effect between Liquidity Risk (Liq R) and Return on Equity (ROE).
H_{6b}: There is no Significant Effect between Reinsurance Risk (Rei R) and Return on Equity (ROE).

Figure (1): Shows The Relationship between the Dependent Variable Representing Return on Assets (ROA) and the Independent Variables

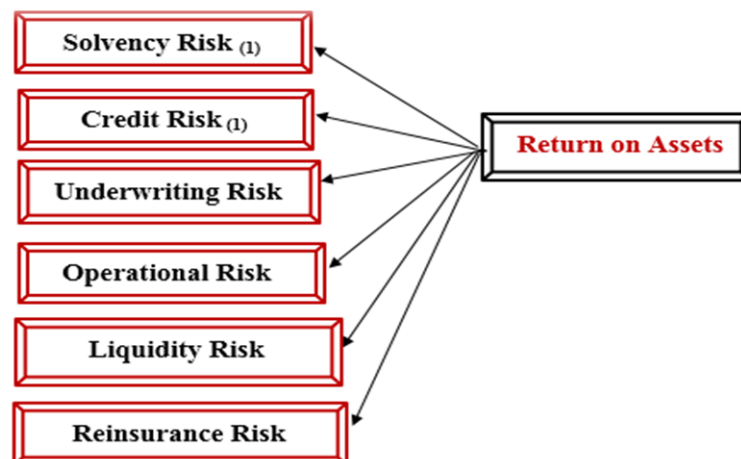


Figure (1) Conceptual Framework

Figure (2): Shows The Relationship between the Dependent Variable Representing Return on Equity (ROE) and the Independent Variables



Figure (2) Conceptual Framework

8. Empirical Result

Creating Panel Data Regression Estimation Model: -

The following are the results of the determination of the Panel Data Regression Estimation Model in the Regression Equation (1) with the Dependent variable Y_1 (**Return on Assets, ROA**), which is then followed by the Regression Equation (2) with the Dependent variable Y_2 (**Return on Equity, ROE**).

Table (5) Show The Panel Data Regression Estimation Model for Return on Assets (ROA)

- The Pooled Regression Model (Commen Effect Model)

variables	Coefficient	Std.Error	T. Test		Effect
			T-Statistic	Prob	
C	2.624	2.743	0.9564	0.342	No Sig.
Solv ₁ R	(0.3384)	0.1055	(3.207)	0.0021	Sig.
Cre ₁ R	(0.0446)	0.2067	(0.216)	0.8296	No Sig.
UR	(0.2651)	0.1884	(1.407)	0.1642	No Sig.
Opera R	(0.2645)	0.1369	(1.931)	0.0518	Sig.
Liq R	0.2008	0.0352	5.700	0.0002	Sig.
Rei R	0.0839	0.0243	3.449	0.001	Sig.
R-Squared	0.795352				
Adjusted R-Squared	0.868923				
S.E of Regression	1.879858				
Sum Squared Resid	229.7013				
Log Likelihood	(143.9277)				
F-Statistic	25.61728				
Prob (F-Statistic)	0.000021				

Mean Dependent var	5.957361
S.D Dependent var	2.863172
Akaike info Criterion	4.192435
Schwarz Criterion	4.413778
Hannan- Quinn Criter	4.280552
Durbin-Watson Stat	1.338372

Source: Output from EvIEWS10.0

The Following is Evident from the Previous: -

-The (R^2) Coefficient Factor is **0.795352**, Indicating that the Independent variables of model (**Solv₁ R, Cre₁ R, UR, Opera R, Liq R, Rei R**), the 79.53% change in the **Return on Assets (ROA)** and the rest of ratio **20.47%** is due to the random Error in the Equation or possibly to the fact that no other Independent variables were to be included in the model or to the different nature of the regression model from the Linear model.

- Denotes the Sig Coefficient is **0.000021**, its show Sig of the proposed model, which is lower than Statistical Significal level = **0.05**, if alternative **H₁ is accepted**, that is sig relationship between the **Return on Assets (ROA)** as a dependent variable and the Independent variables of this model and **refused to H₀**.

- Indicate Results Sig.t are (**0.0021, 0.0518, 0.0002, 0.001**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its show Refused to H₀, which states that there is No Statistically Significant effect for everyone, must be rejected. (**Solv₁ R, Opera R, Liq R, Rei R**) and acceptance of alternative H₁, which shows a Statistically Significant Impact of (**Solv₁ R, Opera R, Liq R, Rei R**) on the Return on Assets (ROA).

- Indicate Results Sig.t are (**0.8296, 0.1642**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its found that Sig.t is **greater than** the value of Statistical Significance = **0.05**, so its show accepted to H₀, which states that there is No Statistically Significant effect for everyone, must be accepted. (**Cre₁ R, UR**) and Rejected of alternative H₁, which shows a Statistically Significant Impact of (**Cre₁ R, UR**) on the Return on Assets (ROA).

Hence, on the basis of results, the following conclusions are drawn:

- The results showed that there is a **significant** impact of Solvency Risk (Solv₁ R) on

the Return on Assets (ROA). Hence, **H_{1a} is Rejected**.

- The results showed that there is a **significant** impact of Operational Risk (Opera R) on the Return on Assets (ROA). Hence, **H_{4a} is Rejected**.

- The results showed that there is a **significant** impact of Liquidity Risk (Liq R) on the Return on Assets (ROA). Hence, **H_{5a} is Rejected**.

- The results showed that there is a **significant** impact of Reinsurance Risk (Rei R) on the Return on Assets (ROA). Hence, **H_{6a} is Rejected**.

- The results showed that there is **no significant** impact of Credit Risk (Cre₁ R) on the Return on Assets (ROA). Hence, **H_{2a} is Accepted**.

- The results showed that there is **no significant** impact of Underwriting Risk (UR) on the Return on Assets (ROA). Hence, **H_{3a} is Accepted**.

This can be Analyzed and Explained: -

- Solvency Risk (Solv₁ R), it's Coefficient Negative is **0.3384**, which means that there is an Inverse Relationship between the Solvency Risk (Solv₁ R) and Return on Assets (ROA), so The higher the Solvency Risk (Solv₁ R), The lower the Return on Assets (ROA), is due to a unit change in Solvency Risk (Solv₁ R) would lead to **decrease** in the Return on Assets (ROA).

- Credit Risk (Cre₁ R), it's Coefficient Negative is **0.0446**, which means that there is an Inverse Relationship between the Credit Risk (Cre₁ R) and Return on Assets (ROA), so The higher the Credit Risk (Cre₁ R), The lower the Return on Assets (ROA), is due to a unit change in Credit Risk (Cre₁ R) would lead to **decrease** in the Return on Assets (ROA).

- Underwriting Risk (UR), it's Coefficient Negative is **0.2651**, which means that there is an Inverse Relationship between the Underwriting Risk (UR),

and Return on Assets (ROA), so The higher the Underwriting Risk (UR), The lower the Return on Assets (ROA), is due to a unit change in Underwriting Risk (UR) would lead to **decrease** in the Return on Assets (ROA).

- Operational Risk (Opera R), it's Coefficient Negative is **0.2645**, which means that there is an Inverse Relationship between the Operational Risk (Opera R), and Return on Assets (ROA), so The higher the Operational Risk (Opera R), The lower the Return on Assets (ROA), is due to a unit change in Operational Risk (Opera R) would lead to **decrease** in the Return on Assets (ROA).

- Liquidity Risk (Liq R), it's Coefficient Positive is **0.2008**, which means that there is a Direct

Relationship between the Liquidity Risk (Liq R), and Return on Assets (ROA), so The lower the Liquidity Risk (Liq R), The higher the Return on Assets (ROA), is due to a unit change in Liquidity Risk (Liq R) would lead to **increase** in the Return on Assets (ROA).

- Reinsurance Risk (Rei R), it's Coefficient Positive is **0.0839**, which means that there is a Direct Relationship between the Reinsurance Risk (Rei R) and Return on Assets (ROA), so The lower the Reinsurance Risk (Rei R), The higher the Return on Assets (ROA), is due to a unit change in Reinsurance Risk (Rei R) would lead to **increase** in the Return on Assets (ROA).

The Estimated Panel Data Regression Line Equation can therefore be Expressed as Follows:

$$ROA_{it} = 2.624 - 0.3384 Solv_1 R_{it,1} - 0.0446 Cre_1 R_{it,2} - 0.2651 UR_{it,3} - 0.2645 Opera R_{it,4} + 0.2008 Liq R_{it,5} + 0.0839 Rei R_{it,6} + \epsilon_{it}$$

- The Fixed Effect Model: -

variables	Coefficient	Std.Error	T. Test		Effect
			T-Statistic	Prob	
C	3.288874	2.557436	1.286004	0.2034	No Sig.
Solv ₁ R	(0.086910)	0.128192	(0.677970)	0.5004	No Sig.
Cre ₁ R	0.129221	0.196099	0.658957	0.5124	No Sig.
UR	(0.525230)	0.218163	(2.407512)	0.0192	Sig.
Opera R	(0.222791)	0.135091	(1.649196)	0.1043	No Sig.
Liq R	0.140649	0.040595	3.464654	0.0010	Sig.
Rei R	0.075840	0.038645	1.962485	0.0543	Sig.
R-Squared	0.7103471				
Adjusted R-Squared	0.859107				
S.E of Regression	1.696035				
Sum Squared Resid	172.5920				
Log Likelihood	(133.6371)				
F-Statistic	26.94009				
Prob (F-Statistic)	0.000027				
Mean Dependent var	5.957361				
S.D Dependent var	2.863172				
Akaike info Criterion	4.045475				
Schwarz Criterion	4.424919				
Hannan- Quinn Criter	4.196533				
Durbin-Watson Stat	1.286151				

Source: Output from EvIEWS10.0

The Following is Evident from the Previous: -

- The (R^2) Coefficient Factor is **0.7103471**, Indicating that the Independent variables of model (**Solv₁ R, Cre₁ R, UR, Opera R, Liq R, Rei R**), the 71.03% change in the **Return on Assets (ROA)** and the rest of ratio **28.97%** is due to the random Error in the Equation or possibly to the fact that no other Independent variables were to be included in the model or to the different nature of the regression model from the Linear model.

- Denotes the Sig Coefficient is **0.000027**, its show Sig of the proposed model, which is lower than Statistical Significal level = **0.05**, if alternative **H₁ is accepted**, that is sig relationship between the **Return on Assets (ROA)** as a dependent variable

and the Independent variables of this model and **refused to H₀**.

- Indicate Results Sig.t are (**0.0192, 0.0010, 0.0543**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its show Refused to H₀, which states that there is No Statistically Significant effect for everyone, must be rejected. (**UR, Liq R, Rei R**) and acceptance of alternative H₁, which shows a Statistically Significant Impact of (**UR, Liq R, Rei R**) on the Return on Assets (ROA).

- Indicate Results Sig.t are (**0.5004, 0.5124, 0.1043**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its found that Sig.t is **greater than** the value of Statistical Significance = **0.05**, so its show accepted to H₀,

which states that there is No Statistically Significant effect for everyone, must be accepted. **(Solv₁ R, Cre₁ R, Opera R)** and Rejected of alternative H₁, which shows a Statistically Significant Impact of **(Solv₁ R, Cre₁ R, Opera R)** on the Return on Assets (ROA).

Hence, on the basis of results, the following conclusions are drawn:

- The results showed that there is a **significant** impact of Underwriting Risk (UR) on the Return on Assets (ROA). Hence, **H_{3a} is Rejected**.
- The results showed that there is a **significant** impact of Liquidity Risk (Liq R) on the Return on Assets (ROA). Hence, **H_{5a} is Rejected**.
- The results showed that there is a **significant** impact of Reinsurance Risk (Rei R) on the Return on Assets (ROA). Hence, **H_{6a} is Rejected**.
- The results showed that there is **no significant** impact of Solvency Risk (Solv₁ R) on the Return on Assets (ROA). Hence, **H_{1a} is Accepted**.
- The results showed that there is **no significant** impact of Credit Risk (Cre₁ R) on the Return on Assets (ROA). Hence, **H_{2a} is Accepted**.
- The results showed that there is **no significant** impact of Operational Risk (Opera R) on the Return on Assets (ROA). Hence, **H_{4a} is Accepted**.

This can be Analyzed and Explained: -

- Solvency Risk (Solv₁ R), it's Coefficient Negative is **0.086910**, which means that there is an Inverse Relationship between the Solvency Risk (Solv₁ R) and Return on Assets (ROA), so The higher the Solvency Risk (Solv₁ R), The lower the Return on Assets (ROA), is due to a unit change in Solvency Risk (Solv₁ R) would lead to **decrease** in the Return on Assets (ROA).

- Credit Risk (Cre₁ R), it's Coefficient Positive is **0.129221**, which means that there is a Direct

Relationship between the Credit Risk (Cre₁ R) and Return on Assets (ROA), so The lower the Credit Risk (Cre₁ R), The higher the Return on Assets (ROA), is due to a unit change in Credit Risk (Cre₁ R) would lead to **increase** in the Return on Assets (ROA).

- Underwriting Risk (UR), it's Coefficient Negative is **0.525230**, which means that there is an Inverse Relationship between the Underwriting Risk (UR) and Return on Assets (ROA), so The higher the Underwriting Risk (UR), The lower the Return on Assets (ROA), is due to a unit change in Underwriting Risk (UR) would lead to **decrease** in the Return on Assets (ROA).

- Operational Risk (Opera R), it's Coefficient Negative is **0.222791**, which means that there is an Inverse Relationship between the Operational Risk (Opera R) and Return on Assets (ROA), so The higher the Operational Risk (Opera R), The lower the Return on Assets (ROA), is due to a unit change in Operational Risk (Opera R) would lead to **decrease** in the Return on Assets (ROA).

- Liquidity Risk (Liq R), it's Coefficient Positive is **0.140649**, which means that there is a Direct Relationship between the Liquidity Risk (Liq R) and Return on Assets (ROA), so The lower the Liquidity Risk (Liq R), The higher the Return on Assets (ROA), is due to a unit change in Liquidity Risk (Liq R) would lead to **increase** in the Return on Assets (ROA).

- Reinsurance Risk (Rei R), it's Coefficient Positive is **0.075840**, which means that there is a Direct Relationship between the Reinsurance Risk (Rei R) and Return on Assets (ROA), so The lower the Reinsurance Risk (Rei R), The higher the Return on Assets (ROA), is due to a unit change in Reinsurance Risk (Rei R) would lead to **increase** in the Return on Assets (ROA).

- The Random Effect Model: -

variables	Coefficient	Std.Error	T. Test		Effect
			T-Statistic	Prob	
C	2.872064	2.608384	1.101089	0.2749	No Sig.
Solv ₁ R	(0.185029)	0.119015	(1.554671)	0.1249	No Sig.
Cre ₁ R	0.067933	0.196061	0.346492	0.7301	No Sig.
UR	(0.397300)	0.200543	(1.981123)	0.0518	Sig.
Opera R	(0.250056)	0.133066	(1.879189)	0.0647	No Sig.
Liq R	0.169443	0.037206	4.554170	0.0004	Sig.
Rei R	0.074553	0.032407	2.300502	0.0246	Sig.
R-Squared	0.702067				
Adjusted R-Squared	0.849304				
S.E of Regression	1.712724				
F-Statistic	28.866029				
Prob (F-Statistic)	0.000025				
Mean Dependent var	2.635751				
S.D Dependent var	2.209836				
Sum Squared Resid	190.6726				
Durbin-Watson Stat	1.300759				

Source: Output from Eviews10.0

The Following is Evident from the Previous: -

- The (R^2) Coefficient Factor is **0.702067**, Indicating that the Independent variables of model (**Solv₁ R, Cre₁ R, UR, Opera R, Liq R, Rei R**), the **70.20%** change in the **Return on Assets (ROA)** and the rest of ratio **29.48%** is due to the random Error in the Equation or possibly to the fact that no other Independent variables were to be included in the model or to the different nature of the regression model from the Linear model.

- Denotes the Sig Coefficient is **0.000025**, its show Sig of the proposed model, which is lower than Statistical Significal level = **0.05**, if alternative **H₁** is accepted, that is sig relationship between the **Return on Assets (ROA)** as a dependent variable and the Independent variables of this model and refused to **H₀**.

- Indicate Results Sig.t are (**0.0518, 0.0004, 0.0246**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its show Refused to **H₀**, which states that there is No Statistically Significant effect for everyone, must be rejected. (**UR, Liq R, Rei R**) and acceptance of alternative

H₁, which shows a Statistically Significant Impact of (**UR, Liq R, Rei R**) on the Return on Assets (**ROA**).

- Indicate Results Sig.t are (**0.1249, 0.7301, 0.0647**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its found that Sig.t is **greater than** the value of Statistical Significance = **0.05**, so its show accepted to **H₀**, which states that there is No Statistically Significant effect for everyone, must be accepted. (**Solv₁ R, Cre₁ R, Opera R**) and Rejected of alternative **H₁**, which shows a Statistically Significant Impact of (**Solv₁ R, Cre₁ R, Opera R**) on the Return on Assets (**ROA**).

Hence, on the basis of results, the following conclusions are drawn:

• he results showed that there is a **significant** impact of Underwriting Risk (UR) on the Return on Assets (ROA). Hence, **H_{3a} is Rejected**. T

• he results showed that there is a **significant** impact of Liquidity Risk (Liq R) on the Return on Assets (ROA). Hence, **H_{5a} is Rejected**. T

• he results showed that there is a **significant** impact of Reinsurance Risk (Rei R) on the Return on Assets (ROA). Hence, **H_{6a} is Rejected**.

• he results showed that there is **no significant** impact of Solvency Risk (Solv₁ R) on the Return on Assets (ROA). Hence, **H_{1a} is Accepted**.

• he results showed that there is **no significant** impact of Credit Risk (Cre₁ R) on the Return on Assets (ROA). Hence, **H_{2a} is Accepted**.

• he results showed that there is **no significant** impact of Operational Risk (Opera R) on the Return on Assets (ROA). Hence, **H_{4a} is Accepted**.

This can be Analyzed and Explained: -

- Solvency Risk (Solv₁ R), it's Coefficient Negative is **0.185029**, which means that there is an Inverse Relationship between the Solvency Risk (Solv₁ R) and Return on Assets (ROA), so The higher the Solvency Risk (Solv₁ R), The lower the Return on Assets (ROA), is due to a unit change in Solvency Risk (Solv₁ R) would lead to **decrease** in the Return on Assets (ROA).

- Credit Risk (Cre₁ R), it's Coefficient Positive is **0.067933**, which means that there is a Direct Relationship between the Credit Risk (Cre₁ R) and Return on Assets (ROA), so The lower the Credit Risk (Cre₁ R), The higher the Return on Assets (ROA), is due to a unit change in Credit Risk (Cre₁ R) would lead to **increase** in the Return on Assets (ROA).

T - Underwriting Risk (UR), it's Coefficient Negative is **0.397300**, which means that there is an Inverse Relationship between the Underwriting Risk (UR) and Return on Assets (ROA), so The higher the Underwriting Risk (UR), The lower the Return on Assets (ROA), is due to a unit change in Underwriting Risk (UR) would lead to **decrease** in the Return on Assets (ROA).

T - Operational Risk (Opera R), it's Coefficient Negative is **0.250056**, which means that there is an Inverse Relationship between the Operational Risk (Opera R) and Return on Assets (ROA), so The higher the Operational Risk (Opera R), The lower the Return on Assets (ROA), is due to a unit change in Operational Risk (Opera R) would lead to **decrease** in the Return on Assets (ROA).

- Liquidity Risk (Liq R), it's Coefficient Positive is **0.169443**, which means that there is a Direct Relationship between the Liquidity Risk (Liq R) and Return on Assets (ROA), so The lower the Liquidity Risk (Liq R), The higher the Return on Assets (ROA), is due to a unit change in Liquidity Risk (Liq R) would lead to **increase** in the Return on Assets (ROA).

- Reinsurance Risk (Rei R), it's Coefficient Positive is **0.074553**, which means that there is a Direct Relationship between the Reinsurance Risk (Rei R) and Return on Assets (ROA), so The lower the Reinsurance Risk (Rei R), The higher the Return on Assets (ROA), is due to a unit change in Reinsurance Risk (Rei R) would lead to **increase** in the Return on Assets (ROA).

Table (6) Show The Panel Data Regression Estimation Model for Return on Equity (ROE)**- The Pooled Regression Model (Commen Effect Model)**

variables	Coefficient	Std.Erorr	T. Test		Effect
			T-Statistic	Prob	
C	17.83090	5.240432	3.402563	0.0011	Sig.
Solv ₂ R	(1.267)	0.267351	(4.742338)	0.00002	Sig.
Cre ₂ R	(0.08855)	0.369024	(0.239970)	0.8111	No Sig.
UR	(1.5896)	0.485897	(3.271627)	0.0017	Sig.
Opera R	0.3653	0.308503	1.184245	0.2406	No Sig.
Liq R	0.037815	0.070863	0.533646	0.5954	No Sig.
Rei R	0.312243	0.060192	5.187478	0.0003	Sig.
R-Squared	0.7516992				
Adjusted R-Squared	0.882406				
S.E of Regression	4.814707				
Sum Squared Resid	1506.791				
Log Likelihood	(211.641)				
F-Statistic	22.59555				
Prob (F-Statistic)	0.000016				
Mean Dependent var	17.50556				
S.D Dependent var	6.628573				
Akaike info Criterion	6.073393				
Schwarz Criterion	6.294735				
Hannan- Quinn Criter	6.16510				
Durbin-Watson Stat	1.348353				

Source: Output from EvIEWS10.0

The Following is Evident from the Previous: -

- The (**R²**) Coefficient Factor is **0.7516992**, Indicating that the Independent variables of model (**Solv₂ R, Cre₂ R, UR, Opera R, Liq R, Rei R**), the **75.16%** change in the **Return on Equity (ROE)** and the rest of ratio **24.84%** is due to the random Error in the Equation or possibly to the fact that no other Independent variables were to be included in the model or to the different nature of the regression model from the Linear model.

- Denotes the Sig Coefficient is **0.000016**, its show Sig of the proposed model, which is lower than Statistical Significal level = **0.05**, if alternative **H₁ is accepted**, that is sig relationship between the **Return on Equity (ROE)** as a dependent variable and the Independent variables of this model and **refused to H₀**.

- Indicate Results Sig.t are (**0.0002, 0.0017, 0.0003**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its show Refused to H₀, which states that there is No Statistically Significant effect for everyone, must be rejected. (**Solv₂ R, UR, Rei R**) and acceptance of alternative H₁, which shows a Statistically Significant Impact of (**Solv₂ R, UR, Rei R**) on the Return on Equity (ROE).

- Indicate Results Sig.t are (**0.8111, 0.2406, 0.5954**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its found that Sig.t is **greater than** the value of Statistical Significance = **0.05**, so its show accepted to H₀, which states that there is No Statistically Significant effect for everyone, must be accepted. (**Cre₂ R, Opera R, Liq R**) and Rejected of alternative H₁, which shows a Statistically

Significant Impact of (**Cre₂ R, Opera R, Liq R**) on the Return on Equity (**ROE**).

Hence, on the basis of results, the following conclusions are drawn:

- The results showed that there is a **significant** impact of Solvency Risk (Solv₂ R) on the Return on Equity (ROE). Hence, **H_{1b} is Rejected**.
- The results showed that there is a **significant** impact of Underwriting Risk (UR) on the Return on Equity (ROE). Hence, **H_{3b} is Rejected**.
- The results showed that there is a **significant** impact of Reinsurance Risk (Rei R) on the Return on Equity (ROE). Hence, **H_{6b} is Rejected**.
- The results showed that there is **no significant** impact of Credit Risk (Cre₂ R) on the Return on Equity (ROE). Hence, **H_{2b} is Accepted**.
- The results showed that there is **no significant** impact of Operational Risk (Opera R) on the Return on Equity (ROE). Hence, **H_{4b} is Accepted**.
- The results showed that there is **no significant** impact of Liquidity Risk (Liq R) on the Return on Equity (ROE). Hence, **H_{5b} is Accepted**.

This can be Analyzed and Explained: -

- Solvency Risk (Solv₂ R), it's Coefficient Negative is **1.267**, which means that there is an Inverse Relationship between the Solvency Risk (Solv₂ R) and Return on Equity (ROE), so The higher the Solvency Risk (Solv₂ R), The lower the Return on Equity (ROE), is due to a unit change in Solvency Risk (Solv₂ R) would lead to **decrease** in the Return on Equity (ROE).

- Credit Risk (Cre₂ R), it's Coefficient Negative is **0.08855**, which means that there is an Inverse

Relationship between the Credit Risk (Cre₂ R) and Return on Equity (ROE), so The higher the Credit Risk (Cre₂ R), The lower the Return on Equity (ROE), is due to a unit change in Credit Risk (Cre₂ R) would lead to **decrease** in the Return on Equity (ROE).

- Underwriting Risk (UR), it's Coefficient Negative is **1.5896**, which means that there is an Inverse Relationship between the Underwriting Risk (UR) and Return on Equity (ROE), so The higher the Underwriting Risk (UR), The lower the Return on Equity (ROE), is due to a unit change in Underwriting Risk (UR) would lead to **decrease** in the Return on Equity (ROE).

- Operational Risk (Opera R), it's Coefficient Positive is **0.3653**, which means that there is a Direct Relationship between the Operational Risk (Opera R) and Return on Equity (ROE), so The lower the Operational Risk (Opera R), The higher the Return on Equity (ROE), is due to a unit change in Operational Risk (Opera R) would lead to **increase** in the Return on Equity (ROE).

- Liquidity Risk (Liq R), it's Coefficient Positive is **0.037815**, which means that there is a Direct Relationship between the Liquidity Risk (Liq R) and Return on Equity (ROE), so The lower the Liquidity Risk (Liq R), The higher the Return on Equity (ROE), is due to a unit change in Liquidity Risk (Liq R) would lead to **increase** in the Return on Equity (ROE).

- Reinsurance Risk (Rei R), it's Coefficient Positive is **0.312243**, which means that there is a Direct Relationship between the Reinsurance Risk (Rei R) and Return on Equity (ROE), so The lower the Reinsurance Risk (Rei R), The higher the Return on Equity (ROE), is due to a unit change in Reinsurance Risk (Rei R) would lead to **increase** in the Return on Equity (ROE).

The Estimated Panel Data Regression Line Equation can therefore be Expressed as Follows:

$$ROE_{it} = 17.83090 - 1.267Solv_2 R_{it,1} - 0.08855 Cre_2 R_{it,2} - 1.5896 UR_{it,3} + 0.3653 Opera R_{it,4} + 0.037815 Liq R_{it,5} + 0.312243 Rei R_{it,6} + \epsilon_{it}$$

- The Fixed Effect Model: -

variables	Coefficient	Std.Error	T. Test		Effect
			T-Statistic	Prob	
C	21.89172	5.430564	4.031206	0.002	Sig.
Solv ₂ R	(0.845397)	0.333846	(2.532298)	0.0140	Sig.
Cre ₂ R	(0.334439)	0.386636	(0.864997)	0.3905	No Sig.
UR	(1.772434)	0.553840	(3.200263)	0.0022	Sig.
Opera R	0.0033118	0.340715	0.097201	0.9229	No Sig.
Liq R	0.025242	0.090483	0.278964	0.7812	No Sig.
Rei R	0.276081	0.098320	2.807976	0.0067	Sig.
R-Squared	0.874676				
Adjusted R-Squared	0.894033				
S.E of Regression	4.475965				
Sum Squared Resid	1202.056				
Log Likelihood	(203.5080)				
F-Statistic	8.701192				
Prob (F-Statistic)	0.000029				
Mean Dependent var	17.50556				
S.D Dependent var	6.628573				
Akaike info Criterion	5.986333				
Schwarz Criterion	6.365777				
Hannan- Quinn Criter	6.137391				
Durbin-Watson Stat	1.372277				

Source: Output from EvIEWS10.0

The Following is Evident from the Previous: -

- The (**R²**) Coefficient Factor is **0.874676**, Indicating that the Independent variables of model (**Solv₂ R, Cre₂ R, UR, Opera R, Liq R, Rei R**), the **87.46%** change in the **Return on Equity (ROE)** and the rest of ratio **12.54%** is due to the random Error in the Equation or possibly to the fact that no other Independent variables were to be included in the model or to the different nature of the regression model from the Linear model.

- Denotes the Sig Coefficient is **0.000029**, its show Sig of the proposed model, which is lower than Statistical Significal level = **0.05**, if alternative **H₁ is accepted**, that is sig relationship between the **Return on Equity (ROE)** as a dependent variable and the Independent variables of this model and **refused to H₀**.

- Indicate Results Sig.t are (**0.0140, 0.0022, 0.0067**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its show Refused to H₀, which states that there is No Statistically Significant effect for everyone, must be rejected. (**Solv₂ R, UR, Rei R**) and acceptance of alternative

H_1 , which shows a Statistically Significant Impact of ($Solv_2 R$, UR , $Rei R$) on the

- Indicate Results Sig.t are (**0.3905, 0.9229, 0.7812**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its found that Sig.t is **greater than** the value of Statistical Significance = **0.05**, so its show accepted to H_0 , which states that there is No Statistically Significant effect for everyone, must be accepted. ($Cre_2 R$, $Opera R$, $Liq R$) and Rejected of alternative H_1 , which shows a Statistically Significant Impact of ($Cre_2 R$, $Opera R$, $Liq R$) on the Return on Equity (ROE).

Hence, on the basis of results, the following conclusions are drawn:

- The results showed that there is a **significant** impact of Solvency Risk ($Solv_2 R$) on the Return on Equity (ROE). Hence, **H_{1b} is Rejected.**
- The results showed that there is a **significant** impact of Underwriting Risk (UR) on the Return on Equity (ROE). Hence, **H_{3b} is Rejected.**
- The results showed that there is a **significant** impact of Reinsurance Risk ($Rei R$) on the Return on Equity (ROE). Hence, **H_{6b} is Rejected.**
- The results showed that there is **no significant** impact of Credit Risk ($Cre_2 R$) on the Return on Equity (ROE). Hence, **H_{2b} is Accepted.**
- The results showed that there is **no significant** impact of Operational Risk ($Opera R$) on the Return on Equity (ROE). Hence, **H_{4b} is Accepted.**
- The results showed that there is **no significant** impact of Liquidity Risk ($Liq R$) on the Return on Equity (ROE). Hence, **H_{5b} is Accepted.**

This can be Analyzed and Explained: -

- Solvency Risk ($Solv_2 R$), it's Coefficient Negative is **0.845397**, which means that there is an Inverse Relationship between the Solvency Risk ($Solv_2 R$) and Return on Equity (ROE), so The higher the Solvency Risk ($Solv_2 R$), The lower the Return on

Equity (ROE), is due to a unit change in Solvency Risk ($Solv_2 R$) would lead to **decrease** in the Return on Equity (ROE).

- Credit Risk ($Cre_2 R$), it's Coefficient Negative is **0.334439**, which means that there is an Inverse Relationship between the Credit Risk ($Cre_2 R$) and Return on Equity (ROE), so The higher the Credit Risk ($Cre_2 R$), The lower the Return on Equity (ROE), is due to a unit change in Credit Risk ($Cre_2 R$) would lead to **decrease** in the Return on Equity (ROE).

- Underwriting Risk (UR), it's Coefficient Negative is **1.772434**, which means that there is an Inverse Relationship between the Underwriting Risk (UR) and Return on Equity (ROE), so The higher the Underwriting Risk (UR), The lower the Return on Equity (ROE), is due to a unit change in Underwriting Risk (UR) would lead to **decrease** in the Return on Equity (ROE).

- Operational Risk ($Opera R$), it's Coefficient Positive is **0.0033118**, which means that there is a Direct Relationship between the Operational Risk ($Opera R$) and Return on Equity (ROE), so The lower the Operational Risk ($Opera R$), The higher the Return on Equity (ROE), is due to a unit change in Operational Risk ($Opera R$) would lead to **increase** in the Return on Equity (ROE).

- Liquidity Risk ($Liq R$), it's Coefficient Positive is **0.025243**, which means that there is a Direct Relationship between the Liquidity Risk ($Liq R$) and Return on Equity (ROE), so The lower the Liquidity Risk ($Liq R$), The higher the Return on Equity (ROE), is due to a unit change in Liquidity Risk ($Liq R$) would lead to **increase** in the Return on Equity (ROE).

- Reinsurance Risk ($Rei R$), it's Coefficient Positive is **0.276081**, which means that there is a Direct Relationship between the Reinsurance Risk ($Rei R$) and Return on Equity (ROE), so The lower the Reinsurance Risk ($Rei R$), The higher the Return on Equity (ROE), is due to a unit change in Reinsurance Risk ($Rei R$) would lead to **increase** in the Return on Equity (ROE).

- The Random Effect Model: -

variables	Coefficient	Std.Erorr	T. Test		Effect
			T-Statistic	Prob	
C	20.89443	5.291823	3.948437	0.0002	Sig.
Solv ₂ R	(0.969963)	0.292506	(3.316043)	0.0015	Sig.
Cre ₂ R	(0.298325)	0.364648	(0.818120)	0.4163	No.Sig.
UR	(1.719726)	0.502899	(3.419622)	0.0011	Sig.
Opera R	0.115052	0.320094	0.359432	0.7204	No.Sig.
Liq R	0.033623	0.077394	0.434435	0.6654	No.Sig.
Rei R	0.281419	0.080255	3.506563	0.0008	Sig.
R-Squared	0.754324				
Adjusted R-Squared	0.866569				
S.E of Regression	4.424300				
F-Statistic	26.481267				
Prob (F-Statistic)	0.000022				
Mean Dependent var	7.513629				
S.D Dependent var	5.351768				
Sum Squared Resid	1272.338				
Durbin-Watson Stat	1.391012				

Source: Output from Eviews10.0

The Following is Evident from the Previous: -

- The (**R²**) Coefficient Factor is **0.754324**, Indicating that the Independent variables of model (**Solv₂ R, Cre₂ R, UR, Opera R, Liq R, Rei R**), the **75.43%** change in the **Return on Equity (ROE)** and the rest of ratio **24.57%** is due to the random Error in the Equation or possibly to the fact that no other Independent variables were to be included in the model or to the different nature of the regression model from the Linear model.

- Denotes the Sig Coefficient is **0.000022**, its show Sig of the proposed model, which is lower than Statistical Significal level = **0.05**, if alternative **H₁** is accepted, that is sig relationship between the **Return on Equity (ROE)** as a dependent variable and the Independent variables of this model and refused to **H₀**.

- Indicate Results Sig.t are (**0.0015, 0.0011, 0.0008**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its show Refused to **H₀**, which states that there is No Statistically Significant effect for everyone, must be rejected.

(**Solv₂ R, UR, Rei R**) and acceptance of alternative **H₁**, which shows a Statistically Significant Impact of (**Solv₂ R, UR, Rei R**) on the Return on Equity (ROE).

- Indicate Results Sig.t are (**0.4163, 0.7204, 0.6654**) for the T.test, by comparing it to a value of Statistical Significance = **0.05**, its found that Sig.t is **greater than** the value of Statistical Significance = **0.05**, so its show accepted to **H₀**, which states that there is No Statistically Significant effect for everyone, must be accepted. (**Cre₂ R, Opera R, Liq R**) and Rejected of alternative **H₁**, which shows a Statistically Significant Impact of (**Cre₂ R, Opera R, Liq R**) on the Return on Equity (ROE).

Hence, on the basis of results, the following conclusions are drawn:

• he results showed that there is a **significant** impact of Solvency Risk (Solv₂ R) on the Return on Equity (ROE). Hence, **H_{1b} is Rejected**.

• The results showed that there is a **significant** impact of Underwriting Risk (UR) on

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the Return on Equity (ROE). Hence, **H_{3b} is Rejected.**

- The results showed that there is a **significant** impact of Reinsurance Risk (Rei R) on the Return on Equity (ROE). Hence, **H_{6b} is Rejected.**

- The results showed that there is **no significant** impact of Credit Risk (Cre₂ R) on the Return on Equity (ROE). Hence, **H_{2b} is Accepted.**

- The results showed that there is **no significant** impact of Operational Risk (Opera R) on the Return on Equity (ROE). Hence, **H_{4b} is Accepted.**

- The results showed that there is **no significant** impact of Liquidity Risk (Liq R) on the Return on Equity (ROE). Hence, **H_{5b} is Accepted.**

This can be Analyzed and Explained: -

- Solvency Risk (Solv₂ R), it's Coefficient Negative is **0.969963**, which means that there is an Inverse Relationship between the Solvency Risk (Solv₂ R) and Return on Equity (ROE), so The higher the Solvency Risk (Solv₂ R), The lower the Return on Equity (ROE), is due to a unit change in Solvency Risk (Solv₂ R) would lead to **decrease** in the Return on Equity (ROE).

- Credit Risk (Cre₂ R), it's Coefficient Negative is **0.298325**, which means that there is an Inverse Relationship between the Credit Risk (Cre₂ R) and Return on Equity (ROE), so The higher the Credit Risk (Cre₂ R), The lower the Return on Equity (ROE), is due to a unit change in Credit Risk (Cre₂ R) would lead to **decrease** in the Return on Equity (ROE).

- Underwriting Risk (UR), it's Coefficient Negative is **1.719726**, which means that there is an Inverse Relationship between the Underwriting Risk (UR) and Return on Equity (ROE), so The higher the Underwriting Risk (UR), The lower the Return on Equity (ROE), is due to a unit change in Underwriting Risk (UR) would lead to **decrease** in the Return on Equity (ROE).

- Operational Risk (Opera R), it's Coefficient Positive is **0.115052**, which means that there is a Direct Relationship between the Operational Risk (Opera R) and Return on Equity (ROE), so The lower the Operational Risk (Opera R), The higher the Return on Equity (ROE), is due to a unit change in Operational Risk (Opera R) would lead to increase in the Return on Equity (ROE).

- Liquidity Risk (Liq R), it's Coefficient Positive is **0.033623**, which means that there is a Direct Relationship between the Liquidity Risk (Liq R) and Return on Equity (ROE), so The lower the Liquidity Risk (Liq R), The higher the Return on Equity (ROE), is due to a unit change in Liquidity Risk (Liq R) would lead to increase in the Return on Equity (ROE).

- Reinsurance Risk (Rei R), it's Coefficient Positive is **0.281419**, which means that there is a Direct Relationship between the Reinsurance Risk (Rei R) and Return on Equity (ROE), so The lower the Reinsurance Risk (Rei R), The higher the Return on Equity (ROE), is due to a unit change in Reinsurance Risk (Rei R) would lead to increase in the Return on Equity (ROE).

From the Previous results, it is Clear that, Table (7) Show The Summary Panel Data Regression Results

Dependent variables	Regression Estimation Model	R-Squared	F-Statistics	Prob (F-Statistic)
ROA	Commen Effect Model	0.795352	25.61728	0.000021
	Fixed Effect Model	0.7103471	26.94009	0.000027
	Random Effect Model	0.702067	28.866029	0.000025

Source: Output from EvIEWS10.0

It is clear from the table that R-Squared for Fixed Effect Model > Random Effect Model, that is **0.7103471 > 0.702067**, Also, Prob (F-Statistic) for Fixed Effect Model > Random Effect Model, that is 0.000027 > 0.000025 Consequently, **The Fixed Effect Model is better.**

Dependent variables	Regression Estimation Model	R-Squared	F-Statistics	Prob (F-Statistic)
ROE	Commen Effect Model	0.7516992	22.59555	0.000016
	Fixed Effect Model	0.874676	8.701192	0.000029
	Random Effect Model	0.754324	26.481267	0.000022

Source: Output from EvIEWS10.0

It is clear from the table that R-Squared for Fixed Effect Model > Random Effect Model, that is **0.874676 > 0.754324**, Also, Prob (F-Statistic) for Fixed Effect Model > Random Effect Model, that is 0.000029 > 0.000022 Consequently, **The Fixed Effect Model is better.**

The Test of Panel Data Regression Model Approach: -

- Hausman Test.

Hausman test is used to choose between Fixed Effect Model and Random Effect Model.

H₀: Random Effect Model

H₁: Fixed Effect Model

If Significance Level is **Less than 0.05**, then the alternative hypothesis H₁ is **accepted** and the null hypothesis H₀ is **rejected**, and therefore the Fixed Effect Model is **the best**.

Table (8) Show The Test of Panel Data Regression Model Approach (Hausman Test) For Return on Assets (ROA)

Fixed Model			
Effect Test	Statistic	d.f	Prob
Cross-Section F	3.970702	(5.60)	0.0035
Cross-Section Chi-Square	20.581148	5	0.0010

Source: Output from EvIEWS10.0

Random Model			
Effect Test	Chi-Sq. Statistic	Chi-Sq. d.f	Prob
Cross-Section Random	0.00000	6	1.0000

Source: Output from EvIEWS10.0

It's clear from the previous two tables that the Significant level of the Return on Assets (ROA) in the **Fixed Effect Model** is **less than** 0.05, while the Significant level of the Return on Assets (ROA) in the **Random Effect Model** is **greater than** 0.05. In this Case, the **Alternative hypothesis H_1** is **accepted** and the **null hypothesis H_0** is **rejected**, and therefore the **Fixed Effect Model** is **better**.

Table (9) Show The Test of Panel Data Regression Model Approach (Hausman Test) For Return on Equity (ROE)

Fixed Model			
Effect Test	Statistic	d.f	Prob
Cross-Section F	3.042142	(5.60)	0.0163
Cross-Section Chi-Square	16.268335	5	0.0061

Source: Output from Eviews10.0

Random Model			
Effect Test	Chi-Sq. Statistic	Chi-Sq. d.f	Prob
Cross-Section Random	2.126788	6	0.9077

Source: Output from Eviews10.0

It's clear from the previous two tables that the Significant level of the Return on Equity (ROE) in the **Fixed Effect Model** is **less than** 0.05, while the Significant level of the Return on Equity (ROE) in the **Random Effect Model** is **greater than** 0.05. In this Case, the **Alternative hypothesis H_1** is **accepted** and the **null hypothesis H_0** is **rejected**, and therefore the **Fixed Effect Model** is **better**.

9. Conclusion

Based on the analysis results which conducted here, there are several conclusions that can be drawn in this research:

Table (10) Show The Summary Panel Data Regression Effects Results

ROA			
Independent Variables	Regression Estimation Model	Sig. / No.Sig.	+ / -
Solv ₁ R	Commen Effect Model	Sig.	-
	Fixed Effect Model	No.Sig.	-
	Random Effect Model	No.Sig.	-
ROA			
Cre ₁ R	Commen Effect Model	No.Sig.	-
	Fixed Effect Model	No.Sig.	+
	Random Effect Model	No.Sig.	+
ROA			
UR	Commen Effect Model	No.Sig.	-
	Fixed Effect Model	Sig	-
	Random Effect Model	Sig.	-
ROA			
Opera R	Commen Effect Model	Sig.	-
	Fixed Effect Model	No.Sig.	-
	Random Effect Model	No. Sig.	-
ROA			
Liq R	Commen Effect Model	Sig.	+
	Fixed Effect Model	Sig.	+
	Random Effect Model	Sig.	+
ROA			
Rei R	Commen Effect Model	Sig	+
	Fixed Effect Model	Sig.	+
	Random Effect Model	Sig.	+

Source: Author's Preparing

ROE			
Independent Variables	Regression Estimation Model	Sig. / No.Sig.	+ / -
Solv ₂ R	Commen Effect Model	Sig.	-
	Fixed Effect Model	Sig.	-
	Random Effect Model	Sig.	-
ROE			
Cre ₂ R	Commen Effect Model	No.Sig.	-
	Fixed Effect Model	No.Sig.	-
	Random Effect Model	No.Sig.	-
ROE			
UR	Commen Effect Model	Sig.	-
	Fixed Effect Model	Sig.	-
	Random Effect Model	Sig.	-
ROE			
Opera R	Commen Effect Model	No.Sig.	+
	Fixed Effect Model	No.Sig.	+
	Random Effect Model	No.Sig.	+
ROE			
Liq R	Commen Effect Model	No.Sig.	+
	Fixed Effect Model	No.Sig.	+
	Random Effect Model	No.Sig.	+
ROE			
Rei R	Commen Effect Model	Sig.	+
	Fixed Effect Model	Sig.	+
	Random Effect Model	Sig.	+

Source: Author's Preparing

10. Recommendation

- The Insurance Companies should be Designed a Program to Secured the Company's Information so that it Protected that Information from any Expected Threats or Risks.

- all Companies Operating in the Egyptian Insurance Market should be quickly adopted the Establishment and activation of specialized risk management departments and support them modern technical models in order to maintain the strength and stability of the Egyptian Insurance Sector.

The Current Study Also Suggests Future Research to Determine and Study the Factors Affecting the Financial Risks of Insurance Companies, as well as applying appropriate Risk Management Strategies, and also the Impact of

Financial Risks on Financial Performance can be applied to Reinsurance Companies and Life Insurance Companies, unlike Property and Casualty Insurance Companies in the Egyptian Insurance Market.

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