Determinants Of Influence On Profitability Indicators For The Insurance Sector (A Study Of Insurance Companies Listed On The Iraq Stock Exchange)

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Abstract

This study aims to study the effect of a group of determinants, namely (retention rate, liquidity ratio, loss rate, financial leverage) on the profitability of insurance companies listed on the Iraq Stock Exchange, which were measured by (return on assets, return on equity, and profit margin). To estimate the study models, data panel models were used during the study period using the Eviews program, and a pooled regression model was used for the purpose of comparing results to test the study hypotheses. Data related to companies was collected through annual reports published in the market. Iraq for securities issued by the companies under study for the period from 2010 to 2021. The results reached by the researcher through the analysis and statistical methods used showed that there is a positive significant effect of the determinants of influence on all profitability indicators adopted in the study.

Keywords: Insurance companies, Panel Data, Profitability,

JEL Codes: G22, C23, G1.

1. Introduction

Insurance companies are considered the insurance and basic pillar of the basic financial services sectors of the economies of countries, as they are the pillar on which the economic direction is based and so on, because of the various insurance services that these companies provide that represent a shield, a defense and an effective means to help investors, whether they are individuals or all of them. This is by compensating them for the damage that may befall them when the risks they are insured against materialize, which makes simple companies the focus of attention and attention of all countries for their active role in the severe state of doubt and uncertainty that is generated among the public as a result of fear of the unknown future, Therefore, it must be emphasized that studying the profitability indicators of insurance companies listed on the Iraqi Stock Exchange is a matter of utmost importance because of its direct impact on the holders of its insurance policies and the beneficiaries of the services it provides to them, in addition to its benefit to shareholders, brokers and investors, given that profitability It is an essential factor for the growth and continuity of any commercial company, and it is considered one of the most prominent[1] measures used to evaluate the ability of insurance companies to generate profits compared to the relevant expenses and costs, Therefore, the failure of insurance companies to be aware of the determinants, factors and influences that affect their profitability in a professional and effective manner will lead to a negative impact on their profitability

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indicators and thus on their financial performance, making it difficult for them to exploit their resources to achieve their desired goals. This is what prompted the researcher to study these influences represented by (determinants of influence), which are the retention rate, liquidity ratio, loss rate, and financial leverage, and to study the impact of each of them on the profitability indicators represented by (return on assets, return on equity, profit margin) for companies. Insurance listed on the Iraq Stock Exchange. Which are five private insurance companies.

2. Literature review

The key points from the study by Al-Mutairi et al. (2021): The study aimed to identify the factors that affect the performance of financial insurance companies listed on the Abu Dhabi Stock Exchange. The independent variables analyzed were liquidity, general and administrative expenses, risks, size, and age. The dependent variable used to evaluate financial performance was the return on assets. The study analyzed data from 17 Emirati insurance companies over a period of seven years (2013-2019) and used regression analysis to assess the impact of the independent variables on financial performance. The study found that age had a positive impact on the profitability of insurance companies, whereas the other independent variables had a negative impact. The study therefore recommended that investors should focus on the age of the company when making investment decisions, as it is a reliable indicator of the company's financial standing and ability to attract clients and generate earnings. Additionally, the study highlighted the importance of customers as a positive factor in the performance of insurance companies.

Murigu (2014) conducted a study that aimed to assess the impact of different variables on the financial performance of insurance companies in Kenya. The return on assets was used as the dependent variable, and the study included a sample of 23 insurance companies operating in Kenya between 2012 and 2019. The study found that financial leverage, share capital, and management efficiency had a statistically significant positive effect on the financial performance of Kenyan insurance companies, whereas ownership structure and company size had a statistically significant negative effect. The remaining independent variables were found to have no statistically significant impact on financial performance. The study made several recommendations, the most important of which was that Kenyan insurance companies should focus on increasing their financial leverage and share capital. Additionally, the study suggested that achieving higher employee performance is necessary to attain the best financial performance for the company.

Ansari and Fola (2014) studied the financial performance of life insurance companies in India using a sample of seven companies. The study employed a quantitative model based on six indicators: capital availability, asset quality, reinsurance, administrative efficiency, liquidity analysis, and profits. The study revealed that return on assets and insurance premiums for new policies had a significant impact on the financial success of life insurance businesses in India. The use of performance indicators and ratio analysis helped to evaluate financial performance and establish control procedures, leading to financial soundness. The study recommended that insurance companies analyze their financial performance using the study indicators and diversify their investments, both internally and externally. Additionally, the report advised insurance companies to conduct courses aimed at enhancing the efficiency of their human potential and growing their talents.

(Abdeljawad & Others, 2020) This study aims to test a group of factors affecting the profitability of insurance companies operating in Palestine, where the independent variables were (company size, growth rate, liquidity, car insurance share, accumulated claims percentage, percentage Financial leverage) and measuring its impact on the dependent variable through (return on assets - ROA). The study included (7) Palestinian insurance companies for the time period from (2006-2018). Panal data models were used to demonstrate the impact of the independent variables on the dependent variables. The

results showed that the company's size, growth rate, and liquidity had a positive impact on the profitability of insurance companies, while the share of automobile insurance in the total insurance portfolio had a negative impact on the company's profitability.

(Kazeem, 2015) This study aims to identify a set of characteristics that are considered specific to the financial performance of insurance companies listed in the Nigerian financial market. The study dealt with a set of independent variables (company size, age, insurance growth in it, loss ratio, leverage financial, liquidity), and to study its impact on the financial performance of insurance companies listed on the Nigerian Stock Exchange as a sample for the study and for the time period (2006-2013). The study reached the conclusion that each of the independent variables (company size, loss ratio, and financial leverage ratio) It had a negative impact on the financial performance of Nigerian insurance companies, while the liquidity ratio had a positive impact on the financial performance of insurance companies, while there was no statistically significant impact for the rest of the other factors on financial performance.

3. the main objectives of the current study

which is to determine the effect of the independent variable, the determinants of the effect, and each of its four dimensions (retention ratio, liquidity ratio, loss ratio, financial leverage) on each of the profitability indicators of insurance companies listed on the Iraqi Stock Exchange, which is considered a dependent variable measured by (Return on Assets). Return on equity, profit margin. My agencies:-

1. Identify the effect of retention rate on profitability indicators in insurance companies.
2. Identify the effect of the liquidity ratio on profitability indicators in insurance companies.
3. Identify the effect of the loss rate on profitability indicators in insurance companies.
4. Identify the effect of financial leverage on profitability indicators in insurance companies.

4. The study problem

The researcher set out to define the problem of the study by reviewing the theoretical literature of previous studies. The researcher found that there are many determinants and other factors that were addressed by Arab and foreign researchers as (determinants of influence) on the profitability indicators of the insurance sector, and due to the lack of local studies in Iraq for this aspect, especially in the insurance sector, Which prompted the researcher to examine the impact determinants related to the study, which are (retention rate, liquidity ratio, loss rate, financial leverage) from the standpoint of avoiding their shortcomings and how to deal with them in the future, through which the profitability of insurance companies can be predicted and thus their financial performance can be improved. Hence, we pose the following question (what is the relationship of the determinants of influence on the profitability indicators of insurance companies listed on the Iraqi Stock Exchange).

5. The importance of the study

The insurance sector plays an important role in building the Iraqi economy, as it is one of the important financial sectors, as the profitability of insurance companies operating in this sector, which is a fundamental pillar of it and one of the basic pillars of financial institutions because of the insurance services they provide to various other sectors and individuals, and considering that the profitability of companies Insurance is one of the indicators of continuity and growth of companies, and the importance of the study stems from its study of what affects the profitability indicators of insurance companies in the Iraqi Stock

Exchange, specifically (the determinants of the impact on profitability indicators), with the aim of determining which of them has a positive impact in order to support and enhance it, and which Some of them have a negative impact, and therefore this is a deviation that requires reducing its impact and not falling into it in the future. The importance of the study also emerges through its presentation of scientific and practical results and recommendations that may help decision makers in the companies sampled in the study to make the right and correct decisions to improve their profitability.

6.Study methodology and statistical methods

In his study, the researcher relied on the descriptive and analytical approach, relying on descriptive statistics and inferential statistics methods, through statistical measures (arithmetic mean, standard deviation, largest value, least value) in the analysis of descriptive statistics. As for inferential statistics, it consisted of testing hypotheses as well as using multiple linear regression analysis to measure the effect of each of the independent variables (determinants of influence) on the dependent variable (profitability indicators for the insurance sector). To clearly demonstrate and identify the effect between these variables, dual data models were used. Of its three types. The statistical analysis process included modern and appropriate statistical methods that are compatible with the study data through the use of cross-sectional time series data analysis, or what is known by the term (Panel Data).

7.Study variables
A. Independent variable: The determinants of the impact include four variables: (retention rate, liquidity ratio, loss rate, financial leverage).
B. Dependent variable: Profitability indicators, which include three variables: (rate of return on assets, rate of return on equity, profit margin).

Figure 1. The study model
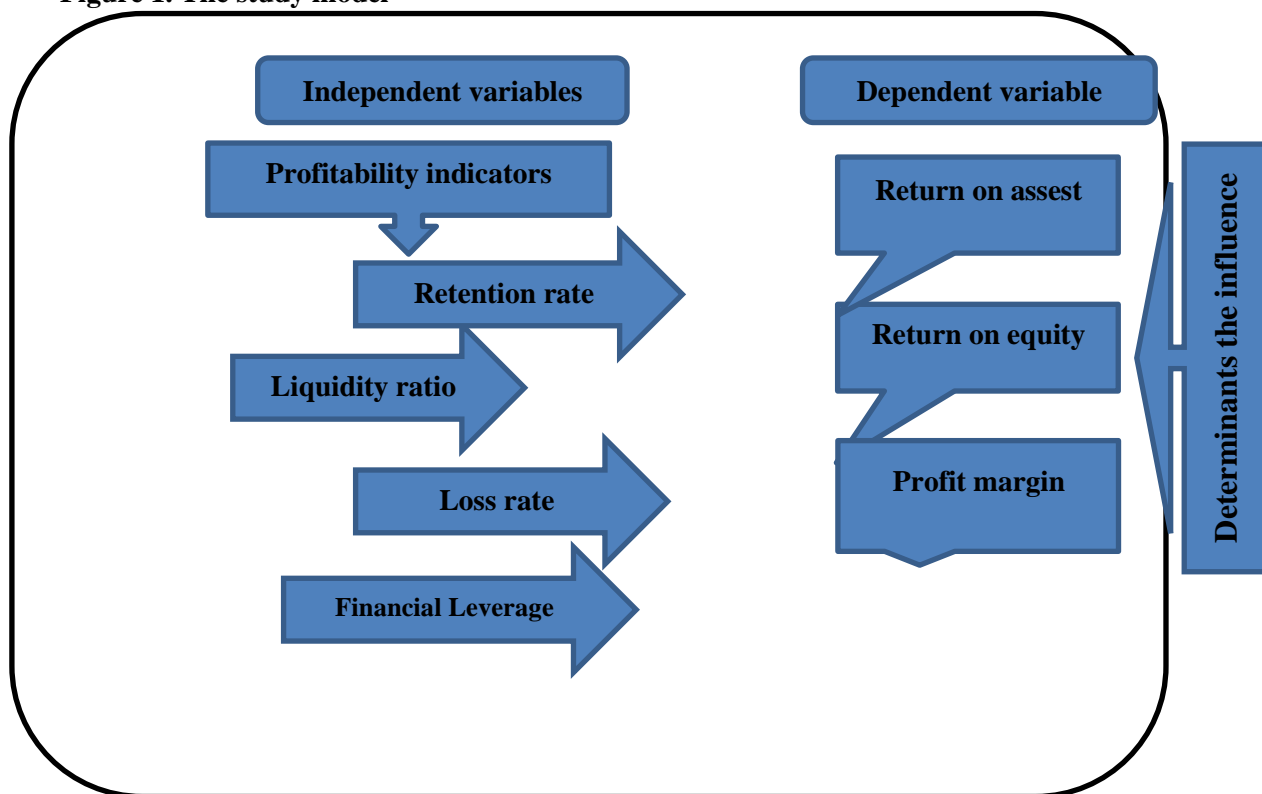
8. Study hypotheses:

Based on the variables of the study, a set of hypotheses can be derived from which the study begins. They may be accepted or rejected according to the final results of the study. These hypotheses are:

A. The first main hypothesis: There is a statistically significant influence relationship between the determinants of influence and the return on assets.
B. The second main hypothesis: There is a statistically significant influence relationship between the determinants of influence and return on equity
C. The third main hypothesis: There is a statistically significant influence relationship between the determinants of influence and profit margin

9. **The limits of the study :**
   A. Spatial boundaries: The study examined the reality of insurance companies listed on the Iraq Stock Exchange
   B. Temporal limits: The current study analyzed data for the period from 2010 to 2021, represented by the financial reports and final accounts of insurance companies listed on the Iraq Stock Exchange .

10. **The study population and sample:**

The study population represented the Iraqi private insurance sector, which was prepared as a field of study, as the study sample included only companies listed on the Iraq Stock Exchange, which numbered (5) insurance companies, which are:

A. Dar AL-Salam Insurance Company.
B. Gulf Insurance Company.
C. Hamraa Insurance Company.
D. Al-Ahlia Insurance Company
E. Al-Ameen Insurance Company.

11. **Concept Determinants of influence:**

A. **Retention rate**:

It is the total insured amounts held by the insurance company and transferred to its account when a specific risk occurs or a disaster occurs that could result in multiple other disastersIt reflects the ability of the operational insurance sector to retain risk, and the extent of its dependence on reinsurance. . (Spice & Philipson, 2016;5).

Table 1 Calculating the independent variable (retention rate) for insurance companies

Retention rate = (net premiums / gross premiums) x 100% for all insurance					
AL-Ameen	AL- Ahlia	Hamraa	Gulf	Dar AL-Salam	years
35.1	33.7	27	12.9	34.5	2010
43.4	80.8	20.6	38.3	39.4	2011
74.5	49.8	6	70	67.7	2012
77.4	28.6	4.4	77.7	60.7	2013
61.6	13.3	12.7	74.1	38.9	2014
36.8	21.3	28.7	30.8	85	2015
19.9	-3.9	56.4	35.1	74.7	2016

39	42.7	83.9	91.3	62.5	2017
35	61.9	62.7	86.7	12.2	2018
48.3	-2391.6	81.9	98.2	15.8	2019
36.4	-611	90.1	91.1	9.6	2020
37.2	4.9	76.1	59.2	16.7	2021

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

Table 2 descriptive statistical measures of the independent variable (retention rate) for the insurance companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
26.4	9.6	85.0	43.1	Dar AL-Salam Insurance Company
28.2	12.9	98.2	63.8	Gulf Insurance Company
32.6	4.4	90.1	45.9	Hamraa Insurance Company
708.2	-2,391.6	80.8	-222.5	AL- Ahlia Insurance Company
17.3	19.9	77.4	45.4	AL- Ameen Insurance Company
325.8	-2,391.6	98.2	-4.9	All companies

Source: The author calculations performed in (Eviews 12)

Table (2) shows the most important descriptive statistical measures for the independent variable (retention rate) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the retention rate variable reached -4.9) with a standard deviation of (325.8), where The highest value of the arithmetic mean of the retention rate variable was for Al-Khaleej Insurance Company, which reached (63.8) with a standard deviation of (28.2). The lowest value of the arithmetic mean of the retention rate variable was for Al-Ahlia Insurance Company, which reached (-222.5) with a standard deviation of (708.2).

B. **The liquidity ratio**:

is the insurance company's ability to fulfill all its obligations towards insurance policyholders, without the need to liquidate its financial assets (Srbinoska, 2018: p40). High liquidity also makes the company miss the opportunity to invest this money and achieve high rates of return from this investment (Mehari&Aemiro.2013:p245-255).

Table 3 Calculating the independent variable (liquidity ratio) for insurance companies

Liquidity ratio = (technical reserves / current assets) x 100% for all insurance companies					
AL- Ameen	AL- Ahlia	Hamraa	Gulf	Dar AL-Salam	years

-0.4	-2.6	2.3	1.5	8.3	**2010**
0.9	-2.5	2.4	1.6	8.8	**2011**
6.5	-0.1	3.3	4.7	11.3	**2012**
4.9	0.5	4.6	4.9	10.2	**2013**
-1.3	8.8	3.9	4.1	8.3	**2014**
-7.1	0.8	3.5	0.9	10.1	**2015**
-2.8	1.5	2	0.5	9.2	**2016**
2.3	1.5	9.5	13.3	5.6	**2017**
-0.8	1.4	9	6.5	3.1	**2018**
0.1	0	7.7	1.3	4.8	**2019**
1.2	0.4	11.6	1	3.2	**2020**
0	2.9	1.4	1.7	3.9	**2021**

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

Table 4 descriptive statistical measures for the independent variable (liquidity ratio) of the insurance companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
2.9	3.1	11.3	7.2	**Dar AL-Salam Insurance Company**
3.7	0.5	13.3	3.5	**Gulf Insurance Company**
3.4	1.4	11.6	5.1	**Hamraa Insurance Company**
2.9	-2.6	8.8	1.0	**AL- Ahlia Insurance Company**
3.5	-7.1	6.5	0.3	**AL- Ameen Insurance Company**
4.1	-7.1	13.3	3.4	**All companies**

Source: The author calculations performed in (Eviews 12)

Table (4) shows the most important descriptive statistical measures for the independent variable (liquidity ratio) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the liquidity ratio variable was (3.4) with a standard deviation of (4.1), where it was The highest value of the arithmetic mean of the liquidity ratio variable for Dar Al Salam Insurance Company reached (7.2) with a standard deviation of (2.9). The lowest value of the arithmetic mean of the liquidity ratio variable for Al-Amin Insurance Company reached (0.3) with a standard deviation of (3.5)

C. **loss rate:**

reflects the underwriting risks for each of the different operational insurance sectors and is calculated through the paid claims (compensation) section on the premiums collected. The value of this rate increases as a result of the inefficiency of the underwriting and pricing

policy of the insurance sector, as the efficiency of the financial and technical performance of the operational insurance sector works to reduce The negative impact of financial losses resulting from errors in pricing risks and estimating claims . (Adams & Buckle, 2003: p138).

Table 5 Calculating the independent variable (loss rate) for insurance companies

Loss rate = (Total claims / Gross premiums) x 100% for all insurance companies					
AL-Ameen	AL- Ahlia	Hamraa	Gulf	Dar AL-Salam	years
3	5.3	10.5	3.7	5.5	**2010**
0.7	0.8	8.5	23.2	9.5	**2011**
2.2	7.9	2.7	94.2	13.6	**2012**
3.4	9.9	3	18.6	8.3	**2013**
8.2	20.8	3.3	12.2	21.1	**2014**
2.2	22.2	17.4	18.7	17.1	**2015**
8.3	38.3	33.8	33.9	49.1	**2016**
84.5	26.7	55.8	2.1	274	**2017**
64.9	30.2	99.3	52.9	17.6	**2018**
27.1	2482.3	65.6	151	1.3	**2019**
0.8	638.1	73.6	60.9	1.4	**2020**
1	1.8	73.7	37.9	1	**2021**

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

Table 6 descriptive statistical measures of the independent variable (loss rate) for the insurance companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
76.4	**1.0**	**274.0**	**35.0**	**Dar AL-Salam Insurance Company**
43.2	**2.1**	**151.0**	**42.4**	**Gulf Insurance Company**
34.5	**2.7**	**99.3**	**37.3**	**Hamraa Insurance Company**
718.2	**0.8**	**2,482.3**	**273.7**	**AL- Ahlia Insurance Company**
28.1	**0.7**	**84.5**	**17.2**	**AL- Ameen Insurance Company**
327.9	**0.7**	**2,482.3**	**81.1**	**All companies**

Source: The author calculations performed in (Eviews 12)

Table (6) shows the most important descriptive statistical measures for the independent variable (loss rate) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the loss rate

variable reached (81.1) with a standard deviation of (327.9), which was The highest value of the arithmetic mean of the loss rate variable was for Al-Ahlia Insurance Company, which reached (273.7) with a standard deviation of (718.2). The lowest value of the arithmetic mean of the loss rate variable was for Al-Amin Insurance Company, which reached (17.2) with a standard deviation of (28.1).

D. **Financial leverage**:

is defined as the degree to which the company depends, in financing its activities, on fixed-income financing sources, whether loans or preferred shares, and the company must commit to paying them, which affects the profits that the owners obtain and also affects the degree of risk to which they are exposed (Pierre, 2010: p765) The term financial leverage is also referred to as being used to measure companies' ability and ability to use debt capital to finance all upcoming investments in the future (Afolabé, et.al, 2019:37).

Table 7 Calculating the independent variable (financial leverage) for insurance companies

Financial leverage = (Total liabilities / Total assets) x 100% for all insurance companies					
AL-Ameen	AL- Ahlia	Hamraa	Gulf	Dar AL-Salam	years
17.9	8.7	37.6	13.2	4.2	**2010**
10.3	14.2	26.1	9.1	4.6	**2011**
8.3	9	46.8	25.2	3.2	**2012**
6.6	6.5	42	21.1	6.1	**2013**
8.7	13	31.3	16.4	14.8	**2014**
10.7	20	31.3	6.3	5.1	**2015**
6	23.3	28	4.8	1.5	**2016**
5.9	25.8	28.9	5.9	-0.6	**2017**
5.3	29.8	25.2	20.2	1.5	**2018**
5.9	31	30.4	19	3	**2019**
6.3	37.1	35.1	20.3	5.7	**2020**
5.4	15.7	46.4	8.6	10.5	**2021**

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

Table 8 descriptive statistical measures for the independent variable (financial leverage) of the insurance companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
4.2	**-0.6**	**14.8**	**5.0**	**Dar AL-Salam Insurance Company**
7.1	**4.8**	**25.2**	**14.2**	**Gulf Insurance Company**
7.5	**25.2**	**46.8**	**34.1**	**Hamraa Insurance Company**

9.9	6.5	37.1	19.5	**AL- Ahlia Insurance Company**
3.6	5.3	17.9	8.1	**AL- Ameen Insurance Company**
12.3	-0.6	46.8	16.2	**All companies**

Source: The author calculations performed in (Eviews 12)

Table (8) shows the most important descriptive statistical measures for the independent variable (financial leverage) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the financial leverage variable was (16.2) with a standard deviation of (12.3), where it was The highest value of the arithmetic mean of the financial leverage variable for Al Hamra Insurance Company reached (34.1) with a standard deviation of (7.5). The lowest value of the arithmetic mean of the financial leverage variable for Dar Al Salam Insurance Company reached (5.0) with a standard deviation of (4.2).

12. Concept Profitability indicators

Profitability is measured by a set of indicators called profitability indicators, the most important of which are the rate of return on assets, return on equity and profit margin, which will be explained as follows:

A. **Rate of return on assets**

This ratio expresses how the company's assets are converted into profits (Moin, 2008:21), and a high ratio indicates a high return achieved, and its purpose is to demonstrate the efficiency of the company's management in achieving net profits from investing assets (Becalli, 2007:2214). This ratio can be used in small financial institutions that have little ownership rights, so the goal of this ratio is to measure profitability (Badreldin, 2009:2).

Table 9 Calculating the dependent variable (return on assets) for insurance companies

Return on assets = (Net profit after tax / Total assets) x 100%					
AL-Ameen	AL- Ahlia	Hamraa	Gulf	Dar AL-Salam	years
2.3	6.5	11	2.3	7.8	2010
6.6	2.3	32	2.4	7.7	2011
10.9	7.3	14.8	0.7	7.1	2012
20.5	10.6	13.1	1.1	6.7	2013
11.7	-6.1	4.9	7	7.4	2014
8.7	-5	9.2	3.2	5.4	2015
4.8	-1.3	5	3.2	2.9	2016
-1.9	-3.5	5.6	8.3	1.8	2017
2.6	-3.4	6.2	6.5	0.6	2018
0.6	8.6	5.1	0.4	2	2019
3.2	-3.2	6.5	0.6	1.9	2020

| 7.4 | 5 | 5.6 | 0.4 | 1.7 | 2021 |

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

It is clear from Table No. (9) that:

✓ Al-Hamra Insurance Company achieved first place in this index, and thus it has maintained its lead. The rate of return on assets ranged between the highest value (32.0%) in (2011), while it reached its lowest value in (2014) with a rate that reached (4.9.%)
✓ Al-Amin Insurance Company ranked second, and the rate of return on assets ranged between the highest value (20.5%) for the year (2015) and the lowest value (-1.9%) for the year (2017), while Dar Al-Salam and Al-Khaleej Insurance companies achieved third and fourth place. respectively.
✓ We note the significant and noticeable decline in the rate of return on assets for (Al-Ahlia Insurance), which ranked last among insurance companies within the study period from (2010-2021), and which reached the lowest value (-6.1%) in the year (2014).

Table 10 Descriptive statistical measures for the dependent variable (return on assets) for insurance companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
2.8	0.6	7.8	4.4	Dar AL-Salam Insurance Company
2.8	0.4	8.3	3.0	Gulf Insurance Company
7.7	4.9	32.0	9.9	Hamraa Insurance Company
5.9	-6.1	10.6	1.5	AL- Ahlia Insurance Company
6.0	-1.9	20.5	6.4	AL- Ameen Insurance Company
6.0	-6.1	32.0	5.1	All companies

Source: The author calculations performed in (Eviews 12)

Table (10) shows the most important descriptive statistical measures for the dependent variable (return on assets) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the return on assets variable reached (5.1) with a standard deviation of (6.0). The highest value of the arithmetic mean of the return on assets variable was for Al-Hamra Insurance Company, which reached (9.9) with a standard deviation of (7.7). The lowest value of the arithmetic mean of the return on assets variable was for Al-Ahlia Insurance Company, which reached (1.5) with a standard deviation of (5.9).

B. **Rate of return on equity**:

The rate of return on equity is one of the most widely used and common ratios in evaluating the financial performance of institutions (Pearl & Rosenbanm, 2009: 36). This ratio shows the efficiency of the company's management in generating profits from each unit of shareholders' equity well (Gilbert & Wheeloct, 2007: 19). This ratio also indicates the

maximization of shareholders' equity if it increases, and is calculated by dividing the net income after tax by the total equity (Petersen & Schoeman, 2008:24).

Table 11 Calculating the dependent variable (return on equity) for insurance companies

Return on equity = (Net profit after tax / equity) x 100%					
AL-Ameen	AL- Ahlia	Hamraa	Gulf	Dar AL-Salam	years
2.8	7.1	17.9	2.6	8.2	2010
7.4	2.7	43.2	2.6	8.1	2011
11.9	8	27.9	0.9	7.3	2012
21.9	11.4	22.6	1.4	8.6	2013
12.8	-7.1	7.1	9.7	8.7	2014
9.7	-6.3	13.4	3.4	5.7	2015
5.1	-1.7	6.9	3.3	2.9	2016
-2	-4.7	7.9	8.8	1.8	2017
2.7	-4.9	8.3	8.1	0.6	2018
0.7	12.5	7.4	0.5	2	2019
3.4	-5.1	10	0.8	2	2020
7.8	5.9	10.3	0.5	1.9	2021

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

It is clear from Table No. (11) that:

✓ Al-Hamra Insurance Company ranked first in terms of return on equity, reaching its highest value (43.2%) in (2011), while its lowest value was reached in (2016) with a rate of (6.9%.(

✓ Al-Amin Insurance Company is ranked second, and its rate of return on equity ranged between (21.9% and -2.0%), while Dar Al-Salam and Al-Khaleej Insurance Company ranked third and fourth, respectively.

✓ A significant decrease in the rate of return on equity for Al-Ahlia Insurance Company, which ranked last among the insurance companies studied during the study period and reached the lowest value (-7.1%) in the year (2014).

Table 12 Descriptive statistical measures for the dependent variable (return on equity) for the companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
3.2	0.6	8.7	4.8	Dar AL-Salam Insurance Company
3.4	0.5	9.7	3.6	Gulf Insurance Company
11.1	6.9	43.2	15.2	Hamraa Insurance Company

7.3	-7.1	12.5	1.5	**AL- Ahlia Insurance Company**
6.5	-2.0	21.9	7.0	**AL- Ameen Insurance Company**
8.2	-7.1	43.2	6.4	**All companies**

Source: The author calculations performed in (Eviews 12)

Table (12) shows the most important descriptive statistical measures for the dependent variable (return on equity) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the variable return on equity reached (6.4) with a standard deviation (8.2) Where the highest value of the arithmetic mean of the return on equity variable was for Al-Hamra Insurance Company, which reached (15.2) with a standard deviation of (11.1), and the lowest value of the arithmetic mean of the return on equity variable was for Al-Ahlia Insurance Company, which reached (1.5) with a standard deviation of (7.3).

C. **Profit margin ratio**:

It represents the ratio that shows the relationship of profit to sales, which reflects the power of sales activity to collect profits. The ratio (gross profit) is calculated by dividing the gross profit by net sales and is used to measure the company's ability to confront small circumstances that may occur due to a decline in market prices or due to an increase in expenses. . The (net profit) ratio is also used, which results from dividing the net profit after tax by the net sales. The company takes this resulting ratio into consideration because it pays great attention to other revenues and expenses. The profit margin may be calculated through the following law (Zaoui & et al, 2022:509).

Table 13 Calculating the dependent variable (profit margin) for insurance companies

Profit margin = (profit / Revenue) x 100%					
AL-Ameen	**AL- Ahlia**	**Hamraa**	**Gulf**	**Dar AL-Salam**	**years**
37	16.8	17.9	1.1	38.4	**2010**
39.2	3	12.6	-18.9	40.5	**2011**
40.7	19.1	9.6	26.7	32.9	**2012**
56	40.4	8.4	32.9	33.7	**2013**
54.1	-36.5	7.7	46	21.9	**2014**
50.7	-32.9	27.2	30.9	37.5	**2015**
27.9	-17.1	18	25.2	42.8	**2016**
-14.3	-56	15.7	40.2	25.3	**2017**
22	-90.7	7.8	34.1	39	**2018**
11.5	-2113	10.6	29.2	9.3	**2019**
27	-200.3	5.3	38.2	11.8	**2020**
43.2	71.4	9.1	5.1	12.2	**2021**

Source: Prepared by the researcher based on insurance companies' reports available on the website http://www.isx-iq.net

It is clear from Table No. (13) that:

- ✓ Al-Amin Insurance Company ranked first in terms of profit margin, reaching its highest value (56.0%) in (2013), while its lowest value was in (2017) with a percentage of (-14.3.(
- ✓ Dar Al Salam Insurance Company is ranked second, and has achieved its highest profit margin rate (40.5%), while Al Khaleej and Al Hamra Insurance Company ranked third and fourth, respectively.
- ✓ A significant decrease in the profit margin percentage of Al-Ahlia Insurance Company, which ranked last among the insurance companies studied during the study period, and reached the lowest value (-2113.0%) in the year (2019).

Table 14 Descriptive statistical measures for the dependent variable (profit margin) for insurance companies

standard deviation	Lowest value	highest value	Arithmetic mean	Details
12.2	9.3	42.8	28.8	Dar AL-Salam Insurance Company
18.9	-18.9	46.0	24.2	Gulf Insurance Company
6.2	5.3	27.2	12.5	Hamraa Insurance Company
606.6	-2,113.0	71.4	-199.7	AL- Ahlia Insurance Company
20.0	-14.3	56.0	32.9	AL- Ameen Insurance Company
277.5	-2,113.0	71.4	-20.2	All companies

Source: The author calculations performed in (Eviews 12)

Table (14) shows the most important descriptive statistical measures for the dependent variable (profit margin) for each of the companies that were studied separately and for all companies studied. It is noted from the table that the arithmetic mean of the profit margin variable reached (-20.2) with a standard deviation of (277.5), where The highest value of the arithmetic mean of the profit margin variable was for Al-Amin Insurance Company, which reached (32.9) with a standard deviation of (20.0). The lowest value of the arithmetic mean of the profit margin variable was for Al-Ahlia Insurance Company, which reached (-199.7) with a standard deviation of (606.6)

13. Standard study

The standard study method used in analyzing the data that examined the impact of determinants influencing the profitability indicators of insurance companies listed on the Iraq Stock Exchange during the period (2010-2021). It's like this:

A. Mathematical models used to describe the relationship between study variables

This model is used to describe the relationship between the determinants of insurance companies' profitability in their four dimensions, which are (retention rate, liquidity ratio, loss rate, and financial leverage) and the dependent variable, profitability indicators for insurance companies, which is expressed in three dimensions, which are (return on assets / return on equity / profit margin). Through which the hypotheses (first, second, and third) are tested.

$$Y_{it} = \beta_0 + +\beta_1 Retention_{it} + \beta_2 Liquidity_{it} + \beta_3 Loss_{it} + \beta_4 Leverage_{it} + e_{it}$$

    B. **Types of data used in the study:** The data is classified into three types:
- ❖ **The first type**: Time Series Data.
- ❖ **The second type**: cross-sectional data.
- ❖ **The third type**: double data (Panel Data)

It is a combination of time series data and cross-sectional data, in which data on a specific phenomenon is collected for a group of countries, companies or individuals for a specific period of time. The third type of data was adopted in this study, which represents time series data for the period from 2010 to 2021 and cross-sectional data that It consists of (five companies), and after merging this data, the number of views became (60). (Al-Hasnain, 2023: 95)

C. The concept of panel data

Panel data are defined as those data that collect the characteristics of both cross-sectional and time series data together at one time, (Daniel & et al, 2007:572). Note that the most important importance of using panel data is that it contains information that deals with the dynamics of time (T) and several words (N) in order to obtain (T*N) views (Gujarati, 2003:640) and that the basic formula will be as follows: (Al-Jamal,2012: 270)

$$y_{it} = \alpha_i + \beta X_{(it)} + \varepsilon_{it} \quad \ldots\ldots(1)$$

    D. <u>**Panel data model:**</u>
1. Pooled Regression Model.
2. Fixed Effects Model.
3. Random Effects Model

14. <u>Testing and analyzing hypotheses of the relationship and influence between study variables</u>

First: Linear regression results for the determinants of the impact on return on assets

1. Estimating panel data models

The dual data modeling methodology includes three basic models: the Pooled Model, the Fixed Effect Model, and the Random Effect Model. Table (15) shows the dual data models for the determinants of profitability and their impact on return on assets.

Table 15 dual data models to measure the effect of determinants on return on assets

Significant regression model			The coefficient of determination	Significance level	Estimated parameters	Independent variables	Sample
Result	Significance level	F					
Insignificant	0.4498	0.9363	-0.004	0.0060	4.788597	C	Pooled Regression Model
				0.1405	-0.020441	**Retention**	
				0.2821	0.217794	**Liquidity**	
				0.1399	-0.020215	**Loss**	

				0.3215	0.065341	**Leverage**	
significance	**0.0041**	**3.2961**	**0.2374**	0.0001	9.350932	**C**	Fixed Effect Model
				0.0426	-0.026104	**Retention**	
				0.6051	0.115235	**Liquidity**	
				0.0781	-0.022030	**Loss**	
				0.0920	-0.187617	**Leverage**	
Insignificant	**0.5061**	**0.8394**	**-0.011**	0.0091	4.615491	**C**	Random Effect Model
				0.1917	-0.018088	**Retention**	
				0.2993	0.207494	**Liquidity**	
				0.1981	-0.017684	**Loss**	
				0.3053	0.066243	**Leverage**	

Source: The author calculations performed in (Eviews 12)

After estimating the three models for the Panel data, we will compare between them and choose the most appropriate one, and then test the validity of the same model using the tests that we previously referred to during the research.

2. Testing the trade-off between the clustering regression model and random effects:

The comparison between the pooled regression model and the rest of the panel data models (the fixed effects model and the random effects model) is made using the Lagrange multiplier test (LM test), according to the hypothesis that was reviewed during the test presentation, and the test results were as shown in the following table:

Table 16 Results of the Lagrange Multiplier Test for Random Effects test

Lagrange Multiplier Test for Random Effects			
	المقاطع	الزمن	الزمن والمقاطع
Breusch-Pagan	5.956110	0.006676	5.962786
Prob	(0.0147)	(0.9349)	(0.0146)

Source: The author calculations performed in (Eviews 12)

Through the results shown in Table (16), we notice that the probability value of the test statistic in the three cases is (0.0147), (0.9349), and (0.0146), meaning that the probability value for segments, time, and segments is smaller than 5%, which means that the null hypothesis 0H is rejected and accepted. Alternative Hypothesis 1H. Hence, the pooled OLS regression model is not appropriate for this study, i.e. the fixed or random effects model is appropriate, and here we need to perform the Hausman test as follows:

Table 17 Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	21.436289	4	0.0003

Source: The author calculations performed in (Eviews 12)

From Table (17) we notice that the probability value of the Hausman test is less than 5%, which means rejecting the null hypothesis and accepting the alternative hypothesis. This means that the fixed effects model is the appropriate model, as we note from Table (38) that the independent variables are not significant except for the retention rate variable, where Its effect was inverse and statistically significant because the value of its level of significance was less than 0.05, as the regression coefficient reached (-0.026104). This indicates that increasing the retention rate variable by one unit will lead to reducing the return on assets by (-0.026104) units in light of the remaining effect remaining constant. Independent variables: As we can see from Table (38), the coefficient of determination for the model as a whole reached (0.24). This means that the independent variables in the model explain (24%) of the changes occurring in the return on assets, while the remaining percentage (76%) is due to other variables. It is not included in the model and falls within the random error component.

Through the results in Table (15) regarding testing the first main hypothesis and through the F test, we concluded the following:

Accepting the first main hypothesis, which states: **"There is a statistically significant influence relationship between the determinants of insurance companies' profitability and the return on assets"**

Second: Linear regression results for determinants of the impact on return on equity

1. Estimating panel data models

The dual data modeling methodology includes three models: the Pooled Model, the Fixed Effect Model, and the Random Effect Model. Table (18) shows the data models for the determinants of profitability and their impact on return on equity.

Table 18 Dual data models to measure the effect of determinants on return on equity

Result	Significance level	F	The coefficient of determination	Significance level	Estimated parameters	Independent variables	Sample
Insignificant	0.0852	2.1628	0.0730	0.0541	4.336779	C	Pooled Regression Model
				0.1153	-0.028795	Retention	
				0.2590	0.301105	Liquidity	
				0.1105	-0.028821	Loss	
				0.0229	0.201274	Leverage	
significance	0.00025	4.6675	0.3321	0.0003	10.90372	C	Fixed Effec

				Prob	Coefficient	Variable	Model
				0.0256	-0.037030	Retention	
				0.7932	0.074839	Liquidity	
				0.0493	-0.031646	Loss	
				0.3053	-0.145081	Leverage	
Insignificant	0.09008	2.12402	0.0708	0.0817	4.034922	C	Random Effect Model
				0.1749	-0.024784	Retention	
				0.2805	0.282735	Liquidity	
				0.1768	-0.024521	Loss	
				0.0182	0.203484	Leverage	

Source: The author calculations performed in (Eviews 12)

After estimating the three models for the Panel data, we will compare between them and choose the most appropriate one, and then test the validity of the same model using the tests that we previously referred to during the research.

2. Testing the trade-off between the clustering regression model and random effects:

The comparison between the pooled regression model and the rest of the panel data models (the fixed effects model and the random effects model) is made using the Lagrange multiplier test (LM test), according to the hypothesis that was reviewed during the test presentation, and the test results were as shown in the following table:

Table 19 Results of the Lagrange Multiplier Test for Random Effects test

Lagrange Multiplier Test for Random Effects			
	Cross-sectional data	Time series data	Time series data and cross-sectional data
Breusch-Pagan	8.246791	0.005541	8.252332
Prob	(0.0041)	(0.9407)	(0.0041)

Source: The author calculations performed in (Eviews 12)

Through the results shown in Table (39), we notice that the probability value of the test statistic in the three cases is (0.0041), (0.9407), and (0.0041), meaning that the probability value for segments, time, and segments is smaller than 5%, which means that the null hypothesis 0H is rejected and accepted. Alternative Hypothesis 1H. Hence, the pooled OLS regression model is not appropriate for this study, i.e. the fixed or random effects model is appropriate, and here we need to perform the Hausman test as follows:

Table 20 Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test			
Test cross-section random effects			
Test Summary	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**
Cross-section random	25.333045	4	0.0000

Source: The author calculations performed in (Eviews 12)

From Table (20) we notice that the probability value of the Hausman test is less than 5%, which means rejecting the null hypothesis and accepting the alternative hypothesis. This means that the fixed effects model is the appropriate model, as we note from Table (41) the significance of the independent variables, retention rate, as its effect was inverse and significant. Statistically significant because the value of its level of significance is less than 0.05, as the regression coefficient reached (-0.037030). This indicates that increasing the retention rate variable by one unit will lead to reducing the return on equity by (-0.037030) units. We also note the significance of the loss rate variable, where it was Its effect is also inverse and statistically significant because the value of its level of significance is less than 0.05, as the regression coefficient reached (-0.024521). This indicates that increasing the loss rate variable by one unit will lead to reducing the return on equity by (-0.024521) units, as we note from Table (41) shows that the coefficient of determination for the model as a whole was (0.33). This means that the independent variables in the model explain (33%) of the changes occurring in the return on equity, while the remaining percentage (67%) is due to other variables not included in the model and is Within the element of random error.

Through the results in Table (18) regarding testing the fifth main hypothesis and through the F test, we concluded the following:

Accepting the second main hypothesis, which states, **"There is a statistically significant influence relationship between the determinants of insurance companies' profitability and return on equity."**

Third: Linear regression results for determinants of the impact on profit margin

**1. Estimating
panel data models**

The dual data modeling methodology includes three basic models: the Pooled Model, the Fixed Effect Model, and the Random Effect Model. Table (21) shows the data models for the determinants of profitability and their impact on the profit margin.

Table 21 Dual data models to measure the impact of determinants on profit margin

Significant regression model			The coefficient of determination	Significance level	Estimated parameters	Independent variables	Sample
Result	Significance level	F					
significance	0.0000	402.527	0.9645	0.3619	13.34570	C	Pooled Regression Model
				0.0001	0.507143	Retention	
				0.6247	-0.855597	Liquidity	

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				0.0063	-0.332700	Loss	
				0.8959	-0.074476	Leverage	
significance	0.0000	195.911	0.9635	0.8205	-5.051919	C	Fixed Effect Model
				0.0001	0.520186	Retention	
				0.4849	-1.573350	Liquidity	
				0.0112	-0.325420	Loss	
				0.2884	1.183143	Leverage	
significance	0.0000	401.359	0.9644	0.3713	13.20520	C	Random Effect Model
				0.0001	0.507378	Retention	
				0.6197	-0.872683	Liquidity	
				0.0063	-0.332481	Loss	
				0.9126	-0.063188	Leverage	

Source: The author calculations performed in (Eviews 12)

After estimating the three models for the Panel data, we will compare between them and choose the most appropriate one, and then test the validity of the same model using the tests that we previously referred to during this research.

2. Testing the trade-off between the clustering regression model and random effects:

The comparison between the pooled regression model and the rest of the panel data models (the fixed effects model and the random effects model) is made using the Lagrange multiplier test (LM test), according to the hypothesis that was reviewed during the test presentation, and the test results were as shown in the following table:

Table 22 Results of the Lagrange Multiplier Test for Random Effects test

Lagrange Multiplier Test for Random Effects			
	Cross-sectional data	Time series data	Time series data and cross-sectional data
Breusch-Pagan	1.665709	0.531757	2.197466
Prob	(0.1968)	(0.4659)	(0.1382)

Source: The author calculations performed in (Eviews 12)

Through the results shown in Table (22), we notice that the probability value of the test statistic in the three cases is (0.1968), (0.4659), and (0.1382), meaning that the probability value for segments, time, and segments is greater than 5%, which means that the null hypothesis 0H is accepted and rejected. Alternative Hypothesis 1H. Hence, the pooled OLS regression model is appropriate for this study, as we notice from Table (44) the significance

of the independent variables, the retention rate, as its effect was direct and statistically significant because the value of its significance level is less than 0.05, as the regression coefficient reached (0.507143), and this It indicates that increasing the retention rate variable by one unit will lead to an increase in the profit margin by (0.507143) units. We also note the significance of the loss rate variable, as its effect was inverse and statistically significant because the value of its level of significance is less than 0.05, as the regression coefficient reached (0.332700) and this This indicates that increasing the loss rate variable by one unit will lead to reducing the profit margin by (0.332700) units. We also notice from Table (44) that the coefficient of determination for the model as a whole reached (0.96). This means that the independent variables in the model explain (96%) of The changes occurring in the profit margin, as for the remaining percentage (4%), are due to other variables not included in the model and fall within the element of random error.

Through the results in Table (21) regarding testing the third main hypothesis and through the F test, we concluded the following:

Accepting the sixth main hypothesis, which states: "**There is a statistically significant influence relationship between the determinants of insurance companies' profitability and the profit margin.**"

15. Conclusions
A. Accepting the first main null hypothesis 0H, which states: "There is a statistically significant influence relationship between the determinants of influence and the return on assets" and rejecting the alternative hypothesis 1H. From testing the significance of the T parameters and through Table (15), it was observed that the independent variables represented by (liquidity ratio, loss rate, financial leverage) were not significant, except for the independent variable (retention rate), where its effect was inverse and statistically significant because the value of its level of significance was less than 0.05
B. Accepting the second main null hypothesis 0H, which states: "There is a statistically significant influence relationship between the determinants of influence and return on equity" and rejecting the alternative hypothesis 1H. From testing the significance of the T parameters and through Table (18), it was observed that the independent variables represented by (liquidity ratio and financial leverage) were not significant, except for the two independent variables (retention rate and loss rate), where their effect was inverse and statistically significant because the value of their level of significance was less than 0.05.
C. Accepting the third main null hypothesis 0H, which states, "There is a statistically significant influence relationship between the determinants of influence and profit margin," and rejecting the alternative hypothesis 1H. From testing the significance of the T parameters and through Table (21), it was observed that the independent variables represented by (liquidity ratio and financial leverage) were not significant, except for the two independent variables (retention rate), whose effect was direct and statistically significant, and (loss rate), as well, but its effect was inverse. It is statistically significant because the value of their level of significance is less than 0.05.

16. Recommendations

Based on the conclusions reached by the study, it complements those conclusions as required by research and practical necessity with a set of recommendations, which are as follows:

A. Regarding retention rates, we must work to review the minimum capital periodically in line with high inflation rates, and in a way that ensures insurance companies stability in the real value of the minimum capital and in a way that guarantees the rights of contract holders, as well as working to enhance the ability

of Iraqi insurance companies and also granting them The ability to expand its insurance activities and confront all its competitors.

B. Regarding liquidity, insurance companies must avoid exaggerating in maintaining their liquidity of cash and not seek to freeze funds without benefiting from them in a meaningful way.

C. Insurance companies listed on the Iraq Stock Exchange must work to diversify the insurance portfolio as well as develop their investment programs in order to achieve additional returns because of their clear impact on the profitability of insurance companies, because it has been observed that insurance companies have always tended towards less risky projects such as real estate and bonds. Therefore, it does not live up to the levels required of it as a financial institution.

D. The insurance companies studied must increase their attention to the determinants of the impact that were adopted in the research, which are (retention rate, liquidity, loss, and relative leverage) in order to achieve the highest amount of profits accruing to their assets and maximize their ownership rights.

E. The necessity of investing the liquidity obtained by the Iraqi insurance companies under study during the time periods when the volume of insurance premiums increases and exploiting it in areas that generate appropriate returns in order to increase the profitability rates of those companies.

F. The need for insurance companies to pay attention to appointing experts in the field of insurance to determine the retention limit for the companies in question, as well as the amounts to be reinsured, in order to ensure that risks are reduced.

G. Work on developing statistical models and tools that are used to measure the determinants of the impact on the profitability of insurance companies.

H. To maintain the profitability and financial position of insurance companies in the future, they must support the technical and technological development of insurance companies and move towards adopting digital insurance by formulating strategies to market insurance documents electronically (remotely) to avoid the decline in the volume of subscribed premiums when crises occur.

I. Training and equipping insurance company employees by involving them in courses on distance marketing strategies for insurance documents.

J. Work in the future to develop and innovate insurance products that are compatible with the nature of the customer's desires in order to gain the trust of shareholders and customers, and this will reflect positively on increasing the volume of subscribed premiums.

K. In order to maintain the financial stability of insurance companies and face the challenges that may arise in the future, it has become necessary to further tighten supervision over Iraqi insurance companies and monitor financial stability assessments of companies' capital. This is due to insurance companies when epidemics, diseases, and wars occur that may lead to an increase in claims, the matter is Which leads, as a result, to a decrease in assets and a loss of part of the capital.

L. To reach a higher market share for the Iraqi insurance sector in the Iraq Stock Exchange, we demand that all public and private Iraqi insurance companies be listed on the market, to provide researchers and investors with the opportunity to obtain information transparently.

M. Urging researchers to conduct more studies and research that are concerned with including new determinants that will affect profitability in insurance companies, in addition to expanding the application of these studies at the level of all companies and sectors and updating them constantly.

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