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RESEARCH ARTICLE – FINANCIAL MANAGEMENT

The Effect of Financial Leverage on Profitability Indicators in Iraqi Insurance Companies

Ahmed Khalaf Hussein Al-Zuhairi [1], Nesrin Halouani [2*]

[1] Institute of Higher Commercial Studies of Sousse, University of Sousse, Tunisia

[2] Higher Institute of Business Administration of Sfax (ISAAS), University of Sfax, Tunisia
[*] Corresponding author E-mail: nesserine.halwani@isaas.usf.tn

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Abstract

This study aims to measure the impact of the financial leverage ratio, an independent variable, on the profitability index, a dependent variable, for private insurance companies in the Iraqi insurance sector, including Dar Al-Salaam, Gulf, Al-Hamra, Al-Amen, and Al-Ahllia. Utilizing a descriptive-analytical approach, the researcher employed measures of central tendency and analyzed them with the statistical program Eviews. The data, derived from annual financial reports published on the Iraq Stock Exchange from 2010 to 2021, was analyzed using linear regression models to test the study hypotheses. The findings indicate that financial leverage significantly influences both the rate of return on assets and the rate of return on equity. Based on these results, the study recommends that insurance companies optimize their financial leverage ratio to enhance revenue generation and profit accumulation, ultimately maximizing shareholder equity. Additionally, to improve their competitive position, companies should diversify their marketing strategies for insurance products and develop robust investment programs to achieve higher returns, which would positively impact profitability.

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1. Introduction

The insurance industry is a vital component of the Iraqi financial sector, providing essential services to both natural and legal persons by offering financial protection against various risks. As a key player in the economy, insurance companies safeguard investments, assets, and income from unforeseen events. This study focuses on the impact of financial leverage on profitability indicators within Iraq's private insurance sector, an area that has received limited attention despite its importance. By examining financial leverage and its effect on profitability, particularly through the return on assets (ROA) and return on equity (ROE) indicators, this study provides valuable insights into the financial performance of insurance companies listed on the Iraq Stock Exchange.

The profitability of insurance companies is crucial for their growth, sustainability, and ability to meet their financial obligations. Efficient management of financial resources, particularly the optimal use of assets and maintaining appropriate liquidity levels, is significant in ensuring that companies can reinvest in projects that generate long-term returns. The relationship between financial leverage—how much a company relies on debt to finance its assets—and profitability is critical for understanding insurance firms' financial structure and performance. Therefore, this study addresses the literature gap by focusing on the Iraqi private insurance sector and exploring how financial leverage affects its profitability.

The primary aim of this research is to analyze the state of profitability indicators, specifically ROA and ROE, among insurance companies listed on the Iraq Stock Exchange from 2010 to 2021. Furthermore, it seeks to elucidate the relationship between financial leverage and these profitability indicators to determine how leverage influences overall performance. Accordingly, the study posits the following hypotheses (Figure 1):

A. A statistically significant relationship exists between financial leverage and return on assets (ROA).

B. There is a statistically significant relationship between financial leverage and return on equity (ROE).

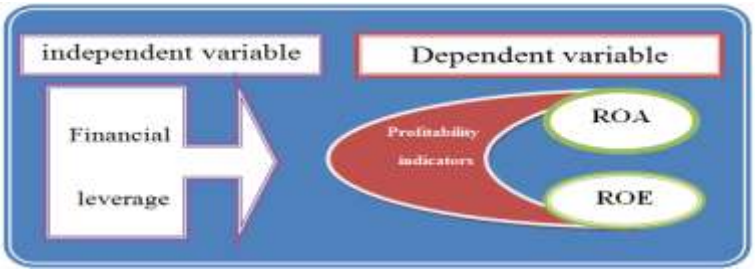

Fig. 1. Study variables (Source: Author projection)

The study also measures the financial leverage ratio (Independent variable) and its direct impact on ROA and ROE (Dependent variables), assessing the extent to which financial leverage contributes to increasing the profits of insurance companies. By addressing these objectives, the research aims to provide actionable insights into the role of financial leverage as a strategic tool for enhancing profitability in Iraq's insurance sector.

To achieve these goals, the study employs a descriptive statistical approach, using measures such as the mean and standard deviation, and tests the impact of financial leverage on profitability through multiple linear regression models using Panel Data. The study sample includes five private-sector insurance companies (Figure 2) listed on the Iraq Stock Exchange over the period 2010–2021, offering a comprehensive analysis of the relationship between financial leverage and profitability in this context.

This research is significant as it sheds light on the financial dynamics within Iraq's insurance sector. It offers valuable findings that can guide decision-makers in leveraging financial structures to improve profitability while mitigating potential risks. This analysis contributes to the broader understanding of financial performance in the insurance industry, particularly in developing markets like Iraq.

This paper is structured to provide a comprehensive understanding of the relationship between financial leverage and profitability in the context of the Iraqi insurance sector. The literature review offers an overview of existing studies on financial leverage and profitability, highlighting key findings and gaps that this research aims to address. Following that, the study concepts and terminology section defines crucial terms such as financial leverage and profitability indicators, ensuring clarity in the subsequent analyses. The statistical study description section details the methodology employed to assess the impact of financial leverage on profitability indicators, including the data sources and statistical techniques used. Finally, the conclusion synthesizes the findings and offers practical recommendations for insurance companies, emphasizing the implications for their financial performance and strategic direction.

Fig. 2. Insurance company (Source: Author projection)

2. Literature review

Previous studies have extensively explored the impact of financial leverage, alongside other factors, on insurance companies' financial performance and profitability across various countries. [1] examined the influence of financial leverage, company size, growth, and car insurance share on Return On Assets (ROA) in the Palestinian insurance sector, finding a positive effect for all variables except car insurance share, which negatively affected ROA. While [2] studied factors controlling profitability in Egypt's property and casualty insurance sector, concluding that financial leverage positively affected both ROA and Return On Equity (ROE), while underwriting risks had a greater impact on ROE. Other researcher, focusing on life insurance companies in India, analyzed variables such as reinsurance, liquidity, capital, and leverage and demonstrated a significant impact of these factors on ROA while recommending stronger financial capabilities for company employees [3]. Murigu (2014) assessed determinants of financial performance in Kenya, identifying financial leverage as having a significant positive effect on ROA for insurance companies, with other variables showing no clear influence [4]. Similarly, Kazeem (2015) studied insurance companies in Nigeria, where liquidity, financial leverage, and loss rate significantly impacted company performance [5].

The present study builds upon these previous works but addresses a critical gap by focusing on the Iraqi context, particularly insurance companies listed on the Iraq Stock Exchange. While previous research predominantly explored insurance sectors in countries like Egypt, India,

Kenya, and Nigeria and emphasized a broader range of factors influencing both government and private sector insurers, the current study narrows its focus to private insurance companies in Iraq, where studies have traditionally concentrated on the government insurance sector, represented by the National Insurance Company and the Iraqi Insurance Company. This distinction makes the present research a novel contribution to understanding financial advantage's role in the profitability of Iraq's private insurance sector, filling a noticeable gap in the existing literature.

3. Study concepts and terminology

In financial analysis, understanding key concepts and terminology is essential for evaluating companies' performance and operational effectiveness, particularly within the insurance sector. Financial leverage and profitability indicators are two critical components that provide insights into how well a company manages its resources and generates returns. This section will explore these concepts in detail, elucidating their significance in assessing insurance companies' financial health and performance.

3.1 Financial leverage

It is a mechanism that allows companies and traders to control assets or investments of greater value than their available capital. Financial leverage amplifies potential returns and risks by using a fraction of the total value. For instance, as [6] explains, leverage provides greater exposure to market movements, enabling companies or investors to multiply returns by capitalizing on even minor price changes. However, this amplification works both ways, meaning that financial leverage can lead to significant losses if market conditions move unfavorably. Financial leverage can be calculated by the ratio of total liabilities to total assets, expressed as a percentage [7] like:

$$\text{Financial leverage} = (\text{Total liabilities} / \text{Total assets}) \times 100\%$$

There are several advantages associated with financial leverage. First, it provides an opportunity for those with limited capital to engage in trades significantly larger than their capital alone would permit [8]. This ability to increase market exposure often leads to multiplied profits, especially when high leverage ratios are employed. Leverage also stimulates market liquidity and trading volume, which enhances the market environment by encouraging greater risk-taking among traders. Additionally, the potential profits can be substantially higher when comparing leverage-based returns to initial investments. Furthermore, leveraging allows traders to allocate only a portion of their capital for specific trades, leaving them with more flexibility to diversify their investments across different financial instruments simultaneously.

However, financial leverage also comes with inherent disadvantages. While the potential for greater profits exists, there is an equally significant risk of magnified losses [9]. The ability to open larger positions than traditional investments can make it difficult for traders or companies to maintain clear oversight of their overall exposure, increasing the risk of underestimating losses. Moreover, diversification of capital, while beneficial in spreading risk, can lead to difficulties in managing the total value of investments, making it challenging to track performance across different assets.

The risks associated with financial leverage are particularly evident in its application within insurance companies. By using borrowed funds for new investments or operations, companies expose themselves to financial risks if the returns from these investments are insufficient to cover the costs of the loans and interest. This mismatch between expected returns and financial obligations can burden companies, as the required financial commitments may exceed their capacity to generate profits, leading to potential financial instability.

3.2 Profitability indicators

Profitability is a key objective for insurance companies, playing a critical role in enhancing their competitiveness, attracting investors, improving solvency levels, and ultimately strengthening the confidence of policyholders. Profitability serves as a vital measure of a company's financial health and performance over a specific period, reflecting its ability to generate profits based on various factors such as sales, assets, capital, and earnings per share. Several ratios are commonly used to evaluate profitability, with the rate of return on assets (ROA) and the rate of return on equity (ROE) being among the most prominent [10].

The rate of return on assets (ROA) is an essential profitability metric that indicates how effectively a company utilizes its assets to generate profits. As [11] suggests, this indicator provides managers, investors, and analysts with insights into the efficiency of the company's asset management practices. A higher ROA implies that the company is generating more profit per unit of assets, making it a critical measure of operational efficiency. ROA is typically expressed as a percentage and can be calculated using the formula:

$$\text{Return on Assets} = (\text{Net profit after Tax} / \text{Total Assets}) \times 100\ \%$$

Similarly, the rate of return on equity (ROE) measures a company's ability to generate profits from the shareholders' equity invested in the business. It provides insights into how effectively a company uses its equity base to produce profits, thus serving as a crucial indicator of profitability from the shareholders' perspective [12]. ROE is calculated by dividing net income by the average shareholders' equity, offering a clear understanding of the returns generated from equity investments. The formula for calculating ROE is as follows:

$$\text{Return on Equity} = (\text{Net profit After Tax} / \text{Equity}) \times 100\ \%$$

Both ROA and ROE are vital tools for analyzing the financial performance of insurance companies, as they highlight the efficiency with which assets and equity are utilized to generate returns. Together, these indicators provide a comprehensive view of the profitability landscape, offering valuable insights for decision-making in the insurance industry.

4. Statistical study description

4.1. Measuring the relationship between variables using panel data

The researcher analyzed to assess the impact of the financial leverage ratio on profitability indicators within the study sample from 2010 to 2021. To achieve this, the following statistical methods were employed:

The relationship between the independent and dependent variables was clarified using a regression model to test the study hypotheses [13]. The model can be expressed as:

$Y_{1t} = \beta_0 + + \beta_1 X_1 + \boldsymbol{e_{it}}$ $Y_{2t} = \beta_0 + + \beta_1 X_1 + \boldsymbol{e_{it}}$

where Y_{it} represents the dependent variable and includes (Y_{1t} is the ROA+Y_{2t} is the ROE),

X denotes the independent variable, β_0 is the intercept,

β_1 is the coefficient of the independent variable,

and $\boldsymbol{e_{it}}$is the error term.

Additionally, the concept of panel data was utilized in this analysis. Panel data refers to a dataset that contains repeated observations of the same subjects over time, which is valuable for measuring changes and trends [14]. This data structure encompasses two dimensions: the time series dimension and the cross-sectional dimension [15]. It can be represented mathematically as:

$$\boldsymbol{y_{it}} = \boldsymbol{\alpha_i} + \boldsymbol{\beta X_{(it)}} + \boldsymbol{\varepsilon_{it}}$$

In this equation, $\boldsymbol{y_{it}}$ is the dependent variable for observation *i* at time *t*, $\boldsymbol{\alpha_i}$ Captures the individual effect, β is the coefficient of the independent variable, and $\boldsymbol{\varepsilon_{it}}$ is the error term for observation *i* at time *t* [16]. This analytical approach enables a comprehensive understanding of how financial leverage influences profitability over the specified period.

4.2. Analyzing the statistical results description

A. Statistical description of the dimensions of the independent variable (financial leverage)

Table 1 .Calcu1ating the (Financial leverage) for All Companies

Details		Dar Al – Salam	Gulf	Al-Hamra	Al - Ahlia	Al - Amen
2010	Total liabilities	144,991,112	190,899,127	1,163,366,491	189,569,950	368,693,254
	Total assets	3,325,518,582	1,314,646,785	3,066,725,180	2,159,013,799	2,029,887,755
	Financial leverage (%)	4.4%	14.5%	37.9%	8.5%	18.2%
2011	Total liabilities	159,877,072	168,983,181	1,034,167,998	485,985,854	254,698,271
	Total assets	3,192,639,479	2,169,828,989	4,159,076,244	3,091,137,252	2,434,221,415
	Financial leverage (%)	4.8%	7.8%	24.9%	15.7%	10.5%
2012	Total liabilities	135,945,559	726,063,488	3,798,936,360	279,930,193	243,266,310
	Total assets	3,963,544,988	2,896,646,744	8,100,097,344	3,092,125,201	2,969,704,544
	Financial leverage (%)	3.4%	25.1%	46.9%	9.1%	8.2%
2013	Total liabilities	321,451,117	597,969,938	3,962,088,491	230,237,711	256,493,147
	Total assets	5,420,167,234	2,783,118,591	9,357,319,363	3,364,681,446	3,791,833,742
	Financial leverage (%)	5.9%	21.5%	42.3%	6.8%	6.8%
2014	Total liabilities	789,312,105	439,258,076	2,628,580,081	446,074,268	376,848,748
	Total assets	5,276,012,162	2,980,641,002	8,366,572,806	3,372,769,386	4,276,016,831
	Financial leverage (%)	15%	14.7%	31.4%	13.2%	8.8%
2015	Total liabilities	269,323,509	137,485,379	2,962,263,257	693,124,477	474,919,218
	Total assets	5,216,393,960	2,035,399,892	9,428,518,520	3,499,061,716	4,465,719,896
	Financial leverage (%)	5.2%	6.8%	31.4%	19.8%	10.6%
2016	Total liabilities	83,261,815	96,997,863	2,665,199,702	838,092,174	291,212,076
	Total assets	4,965,323,407	2,055,896,606	9,634,868,000	3,556,938,604	4,326,624,954

	Financial leverage (%)	1.7%	4.7%	27.6%	23.6%	6.7%
2017	Total liabilities	-24,666,857	146,611,512	3,329,191,672	903,810,737	256,407,586
	Total assets	4,542,666,864	2,765,600,455	11,493,742,614	3,516,304,668	4,239,685,124
	Financial leverage (%)	-0.5%	6%	29%	25.7%	6%
2018	Total liabilities	99,590,122	639,109,170	2,967,296,137	1,085,385,391	228,857,839
	Total assets	5,992,769,769	3,246,807,360	11,739,922,269	3,476,744,757	4,235,718,566
	Financial leverage (%)	1.7%	20.3%	25.3%	31.2%	5.4%
2019	Total liabilities	227,384,854	556,447,222	4,059,572,782	978,358,398	258,723,278
	Total assets	8,301,558,965	2,915,178,436	13,434,553,513	3,141,404,581	4,293,441,756
	Financial leverage (%)	3.7%	19.1%	30.2%	31.1%	6%
2020	Total liabilities	489,416,382	601,551,328	5,703,419,524	1,231,386,269	289,373,280
	Total assets	8,663,356,242	2,997,096,874	16,286,282,951	3,296,540,308	4,512,991,037
	Financial leverage (%)	5.6%	20.1%	35%	37.3%	6.4%
2021	Total liabilities	933,284,281	703,738,641	9,039,478,722	1,440,359,309	253,575,219
	Total assets	8,806,529,573	8,307,596,691	19,583,793,905	8,580,484,208	4,795,645,346
	Financial leverage (%)	10.6%	8.5%	46.2%	16.8%	5.3%

Source: Source: [17] Based on data published on the company's website http://www.isx-iq.net

Table 2. Descriptive statistics for financial leverage

Details	Mean	Max	Min	Std. Dev.*
Dar AL – Sa1aam. Com	5.2	15.0	0.5-	3.2
Gu1f. Com	13.2	25.1	4.7	6.1
AL – Hamra. Com	32.1	46.9	24.9	7.3
AL- Ahllia. Com	18.5	37.4	6.8	9.8
AL- Amen.Com	8.1	18.2	5.3	3.4
A1l companies	15.42	46.9	0.5-	12.2

Source: The author's calculations performed in (Eviews 12)

Table 2 describes the statistics for the financial leverage ratio of the studied companies. The companies achieved an arithmetic mean of 15.42 for the variable, with a standard deviation 12.2. It was noted that Al Hamra Company achieved the highest average of 32.1 with a standard deviation of 7.3, while the lowest average was -0.5 with a standard deviation of 3.2 for Dar Al Salam Company.

B. The statistical description of contractual change (Return On Assets)

Table 3. Calcu1ating the (Return on Assets) for All Companies

Details		Dar Al - Salam	Gulf	Al-Hamra	Al - Ahlia	Al - Amen
2010	Total Assets	3,225,518,582	1,214,646,785	3,066,725,180	2,159,013,799	2,029,887,755
	Net profit After Tax	252,633,688	27,902,842	335,814,468	140,869,171	46,226,812
	Return on Assets (%)	7.8	2.3	11	6.5	2.3
2011	Total Assets	3,392,639,479	2,196,828,989	4,159,076,244	3,061,137,252	2,480,221,415
	Net profit After Tax	262,866,985	51,688,014	1,329,861,438	70,723,971	163,773,465
	Return on Assets (%)	7.7	2.4	32	2.3	6.6
2012	Total Assets	3,963,544,988	2,889,646,744	8,100,097,344	3,092,125,201	2,919,704,544

* Standard deviation

	Net profit After Tax	280,113,658	18,929,789	1,202,192,849	226,539,009	319,297,668
	Return on Assets (%)	7.1	0.7	14.8	7.3	10.9
2013	Total Assets	5,430,167,234	2,782,118,591	9,357,319,363	3,364,681,446	3,791,833,742
	Net profit After Tax	362,986,020	31,105,740	1,227,536,798	357,475,586	775,820,851
	Return on Assets (%)	6.7	1.1	13.1	10.6	20.5
2014	Total Assets	5,279,012,162	2,680,399,892	8,366,572,806	3,372,769,386	4,276,016,831
	Net profit After Tax	390,570,899	187,902,036	409,202,065	-207,043,617	501,092,238
	Return on Assets (%)	7.4	7	4.9	-6.1	11.7
2015	Total Assets	5,219,393,960	2,035,641,002	9,428,518,520	3,468,061,716	4,425,719,896
	Net profit After Tax	281,698,787	64,796,126	867,287,444	-173,640,151	384,624,747
	Return on Assets (%)	5.4	3.2	9.2	-5	8.7
2016	Total Assets	4,755,323,407	2,055,896,606	9,634,868,000	3,556,938,604	4,326,624,954
	Net profit After Tax	137,696,857	64,797,485	479,717,139	-45,090,809	205,631,269
	Return on Assets (%)	2.9	3.2	5	-1.3	4.8
2017	Total Assets	4,242,666,864	2,795,600,455	11,493,742,614	3,516,304,668	4,239,685,124
	Net profit After Tax	75,945,323	231,524,279	648,291,150	-121,352,499	-79,070,294
	Return on Assets (%)	1.8	8.3	5.6	-3.5	-1.9
2018	Total Assets	5,812,769,769	3,149,807,360	11,739,922,269	3,475,744,757	4,235,718,566
	Net profit After Tax	32,692,635	204,415,247	727,055,261	-119,494,534	108,416,332
	Return on Assets (%)	0.6	6.5	6.2	-3.4	2.6
2019	Total Assets	8,302,558,965	2,915,178,436	13,334,553,513	3,141,404,581	4,293,441,756
	Net profit After Tax	162,374,033	12,914,590	685,770,457	270,822,228	26,485,551
	Return on Assets (%)	2	0.3	5.1	8.6	0.6
2020	Total Assets	8,563,356,242	2,967,096,874	16,286,282,951	3,296,540,308	4,512,991,037
	Net profit After Tax	160,522,043	18,344,604	1,056,883,126	-105,544,991	143,522,837
	Return on Assets (%)	1.9	0.6	6.5	-3.2	3.2
2021	Total Assets	8,806,529,573	8,207,596,691	19,583,793,905	8,530,484,208	4,795,645,346
	Net profit After Tax	147,442,636	35,344,969	1,105,712,625	426,703,609	353,151,526
	Return on Assets (%)	1.7	0.4	5.6	5	7.4

Source: Source: Based on data published on the company's website http://www.isx-iq.net

Table 4. Descriptive statistics of (ROA) for all companies

Details	Mean	Max	Min	Std. Dev.
Dar AL – Salaam.Com	4.2	7.8	1.7	2.9
Gulf. Com	3.6	8.3	0.3	2.6
AL – Hamra. Com	9.4	32	5	7.6
AL- Ahllia. Com	1.2	10.6	-6.1	5.9
AL- Amen.Com	6.1	20.5	-1.9	6.4
All companies	4.9	32	-1.9	5.8

Source: The author's calculations performed in (Eviews 12)

Table 4 shows all descriptive statistics for the (ROA) for each sample, and an arithmetic mean of 4.9 was achieved for all companies with a standard deviation of 5.8. It was noted that Al Hamra had the highest arithmetic mean of 32 among the companies, with a standard deviation of 7.6, while the arithmetic mean for Dar Al Salam Company was The lowest rate was 7.8 among companies, with a Std. Dev. of 2.9.

C. Statistical description of contractual change (ROE)

Table 5. Calcu1ating the (Return on Equity) for All Companies

Details		Dar Al - Salam	Gulf	Al-Hamra	Al - Ahlia	Al - Amen
2010	Equity	3,090,527,470	1,053,747,658	1,871,762,061	1,970,443,849	1,666,194,501
	Net profit After Tax	252,633,688	27,902,842	335,814,468	140,869,171	46,226,812
	Return on Equity (%)	8.2	2.6	17.9	7	2.8
2011	Equity	3,235,762,407	1,997,845,808	3,074,908,246	2,625,151,398	2,225,523,144
	Net profit After Tax	262,866,985	51,688,014	1,329,861,438	70,723,971	163,773,465
	Return on Equity (%)	8.1	2.6	43.2	2.7	7.4
2012	Equity	3,837,599,429	2,160,583,256	4,311,160,984	2,815,195,008	2,677,438,234
	Net profit After Tax	280,113,658	18,929,789	1,202,192,849	226,539,009	319,297,668
	Return on Equity (%)	7.3	0.9	27.9	8	11.9
2013	Equity	4,198,716,117	2,194,148,653	5,425,230,872	3,144,443,735	3,541,340,595
	Net profit After Tax	362,986,020	31,105,740	1,227,536,798	357,475,586	775,820,851
	Return on Equity (%)	8.6	1.4	22.6	11.4	21.9
2014	Equity	4,498,700,057	1,931,355,371	5,747,992,725	2,932,695,118	3,902,168,083
	Net profit After Tax	390,570,899	187,902,036	409,202,065	-207,043,617	501,092,238
	Return on Equity (%)	8.7	9.7	7.1	-7.1	12.8
2015	Equity	4,953,071,451	1,908,155,623	6,476,255,263	2,773,937,239	3,952,800,678
	Net profit After Tax	281,698,787	64,796,126	867,287,444	-173,640,151	384,624,747
	Return on Equity (%)	5.7	3.4	13.4	-6.3	9.7
2016	Equity	4,683,061,592	1,956,598,743	6,939,748,298	2,728,846,430	4,065,412,878
	Net profit After Tax	137,696,857	64,797,485	479,717,139	-45,090,809	205,631,269
	Return on Equity (%)	2.9	3.3	6.9	-1.7	5.1
2017	Equity	4,267,333,721	2,630,988,943	8,167,550,942	2,607,493,931	3,989,277,538
	Net profit After Tax	75,945,323	231,524,279	648,291,150	-121,352,499	-79,070,294
	Return on Equity (%)	1.8	8.8	7.9	-4.7	-2
2018	Equity	5,726,179,647	2,512,698,190	8,782,626,132	2,440,359,366	4,011,860,727
	Net profit After Tax	32,692,635	204,415,247	727,055,261	-119,494,534	108,416,332
	Return on Equity (%)	0.6	8.1	8.3	-4.9	2.7
2019	Equity	8,055,174,111	2,360,731,214	9,286,980,731	2,168,046,183	4,039,718,478
	Net profit After Tax	162,374,033	12,914,590	685,770,457	270,822,228	26,485,551
	Return on Equity (%)	2	0.5	7.4	12.5	0.7
2020	Equity	8,076,939,860	2,365,545,546	10,586,963,427	2,075,154,039	4,227,617,757
	Net profit After Tax	160,522,043	18,344,604	1,056,883,126	-105,544,991	143,522,837
	Return on Equity (%)	2	0.8	10	-5.1	3.4
2021	Equity	7,883,245,292	7,504,858,050	10,764,315,183	7,190,124,899	4,537,070,127
	Net profit After Tax	147,442,636	35,344,969	1,105,712,625	426,703,609	353,151,526

	Return on Equity (%)	1.9	0.4	10.3	5.9	7.8

Source: Source: Based on data published on the company's website http://www.isx-iq.net

Table 6 .Descriptive statistics of (ROE) for all Companies

Details	Mean	Max	Min	Std. Dev.
Dar AL–Sa1aam.Com	4.8	8.7	0.6	3.2
Gu1f.Com	3.6	9.7	0.4	3.4
A1 – Hamra.Com	15.2	43.2	6.9	11.1
A1- Ahllia.Com	1.5	12.5	-7.1	7.3
A1- Amen.Com	7	21.9	-2	6.5
A1l companies	6.42	43.2	-7.1	8.2

Source: The author's calculations performed in (Eviews 12)

Table 6 shows the most prominent descriptive statistics for the insurance companies studied, as their arithmetic mean reached 6.42 for return on equity, with a standard deviation of 8.2. Al-Hamra Company achieved the largest arithmetic mean with a value of 43.2 for the dependent variable, with a standard deviation of 11.1, while the arithmetic mean for the National Company reached -7.1, the lowest compared to other companies. With a standard deviation of 7.3.

D. Statistical results interpretation

The research sample analysis yielded several critical findings regarding the relationship between financial leverage and profitability indicators across the firms. Descriptive statistics indicate that the average financial leverage for the sampled companies was 15.42, with a standard deviation of 12.2. Al Hamra Company exhibited the highest financial leverage, with a mean of 32.1 and a standard deviation 7.3. At the same time, Dar Al Salam Company recorded the lowest financial leverage, with a mean of -0.5 and a standard deviation of 3.2. For Return on Assets (ROA), the overall sample achieved an arithmetic mean of 4.9, with a standard deviation 5.8. Al Hamra Company again led with the highest ROA (mean = 32, standard deviation = 7.6), while Dar Al Salam recorded the lowest (mean = 7.8, standard deviation = 2.9). Concerning Return on Equity (ROE), the sample's mean was 6.42, with a standard deviation 8.2. Al Hamra achieved the highest ROE, with a mean of 43.2 and a standard deviation of 11.1, whereas the National Company had the lowest ROE, at -7.1, with a standard deviation of 7.3.

4.3 Testing and analyzing hypotheses

In this section, we present the results of the linear regression analysis conducted to evaluate the effect of financial leverage on the profitability indicators, specifically the return on assets (ROA) and return on equity (ROE).

4.3.1. Linear Regression Results of the Effect of Financial Leverage On (ROA)

A. Estimating panel data models

Table 7. Three models for paired data used to measure the effect of the (financial leverage) on (ROA).

Sample	Independent Variables	Estimated Parameters	Sig - Level	R-squared	Significant Regression Model		
					F	Sig - Level	Result
Pooled Regression Model	C	4.677486	0.0050	-0.003	0.9353	0.4478	Insignificant
	Leverage	-0.030541	0.1305				
fixed effect model	C	9.450832	0.0001	0.2354	3.2941	0.0031	Significance
	Leverage	-0.035104	0.0426				
Random Effect Model	C	4.514491	0.0091	-0.011	0.8374	0.5041	Insignificant
	Leverage	-0.017086	0.1917				

Source: The author's calculations performed in (Eveiws 12)

Table (7) shows that the three most appropriate models were selected after testing their validity by comparing them.

B. Test Trade-Off Between Models:

Using the Lagrange multiplier test, a comparison was made between the models used in the analysis and the result shown in Table (8) was reached based on the hypothesis set as follows:

Table 8. Results of (LM Test*) for Random Effects test

	Cross-sectional data	Time series data	Time series data and cross-sectional data
Breusch-Pagan	5.956110	0.006676	5.962786
Prob	(0.0137)	(0.9359)	(0.0136)

Source: The author's calculations performed In (Eviews 12)

Table 8 shows that the null hypothesis was rejected, and the alternative hypothesis was accepted because the potential value of the sections and time is less than 5% for the three cases (0.0137), (0.9359), and (0.0136). Therefore, the aggregate regression model does not fit the researcher's study. Thus, the researcher is required to conduct the Hausman test, considering that the appropriate model for the study is the fixed effects model, which is:

Table 9. Correlated Random Effects - Hausman Test

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	21.426279	4	0.0002

Source: The author's calculations performed in (Eviews 12)

Table 9 shows that the appropriate model is fixed effects because its probability value is less than (5%). Based on this, (H1) was accepted, and (H0) was rejected. Table 7 also shows that financial leverage has a negative effect because it achieved a regression coefficient of -0.035104 and a significance level of less than 5%. This means that every increase that occurs by one unit will decrease -0.0356104 in (ROA) when the rest of the other factors are stable and constant. It was also noted that the model reached its coefficient of determination of 0.23, indicating that what it explains amounts to 23% of the change it causes (ROA). Through (F), we confirm the first hypothesis: The financial leverage ratio affects ROA.

4.3.2. Linear Regression Results of the Effect of Financial Leverage on (ROE)

a- Estimating panel data models

Table (10) shows the three models for paired data used to measure the effect of the financial leverage ratio on the rate of (ROE).

Table 10. Dual data models to measure the effect of Financial Leverage on (ROE)

Sample	Independent variables	Estimated parameters	Sig - level	R-squared	Significant regression model		
					F	Sig - level	Results
Pooled Regression Model	C	4.326579	0.0531	0.0740	2.1528	0.0752	Insignificant
	Leverage	-0.038785	0.1143				
Fixed Effect Model	C	9.90472	0.0003	0.3221	4.6575	0.00035	significance
	Leverage	-0.036040	0.0246				
Random Effect Model	C	4.024822	0.0617	0.0608	2.12502	0.08008	Insignificant
	Leverage	-0.014684	0.1649				

Source: The author's calculations performed in (Eviews 12)

Table 10 shows that the three most appropriate models were selected after testing their validity by comparing them.

b- Testing the trade-off between models:

Using the Lagrange multiplier test, a comparison was made between the models used in the analysis and the result shown in Table (23) was reached based on the hypothesis set as follows:

Table 11.Results of LM Test for Random Effects test

	Cross-sectional data	Time series data	Time series data and cross-sectional data
Breusch-Pagan	8.246591	0.005341	8.252432
Prob	(0.0021)	(0.9507)	(0.0031)

Source: The author's calculations performed in (Eviews 12)

Table 11 shows that the null hypothesis was rejected, and the alternative hypothesis was accepted because the potential value of the sections and time is less than 5% for the three cases (0.0021), (0.9507), and (0.0031). Therefore, the aggregate regression model does not fit the

* Lagrange Multiplier Test

researcher's study. Thus, the researcher is required to conduct the Hausman test, considering that the appropriate model for the study is the fixed effects model, which is as follows:

Table 12. Correlated Random Effects - Hausman Test

Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	25.332045	4	0.0001

Source: The author's calculations performed in (Eviews 12)

Table 12 shows that the appropriate model is fixed effects because its probability value is less than 5%. Therefore, (H0) was rejected, and (H1) was accepted. Table 10 also shows that financial leverage has a negative effect because it achieved a regression coefficient of -0.036040 and a significance level of less than 5%. This means that every increase that occurs by one unit will decrease (-0.036040) in (ROE) when the other factors are stable and constant. It was also noted that the model reached its coefficient of determination of 0.32, indicating that the model explains 32% of the change it causes in (ROE).

Through (F), we confirm the second hypothesis ((The financial leverage ratio affects (ROE)).

4.3.3. Hypotheses testing interpretation

The hypotheses testing provided further insights into the impact of financial leverage on profitability. The results supported the acceptance of the first null hypothesis, which proposed that financial leverage has a statistically significant effect on ROA, thereby rejecting the alternative hypothesis. Similarly, the second null hypothesis, positing that financial leverage significantly affects ROE, was also accepted, leading to the rejection of the alternative hypothesis. These findings suggest that financial leverage is critical in determining ROA and ROE within the sampled firms, underscoring its importance as a key determinant of profitability. The results contribute to a broader understanding of capital structure's role in enhancing firm performance, particularly in the insurance sector, where leverage is a significant factor in financial decision-making.

5. Conclusion

This study explores the impact of financial leverage on the profitability indicators—return on assets (ROA) and return on equity (ROE)—of insurance companies listed on the Iraq Stock Exchange between 2010 and 2021. The findings indicate a significant positive relationship between financial leverage and ROA and ROE, highlighting leverage as a strategic tool for enhancing profitability. This underscores the importance of efficient capital management and prudent debt utilization for improving financial returns in the competitive Iraqi insurance sector.

Insurance companies must focus on several key strategies to enhance financial performance and ensure sustainable growth. First and foremost, prioritizing the leverage ratio is crucial for generating additional revenues and maximizing shareholder equity. In addition, diversifying marketing strategies for insurance products and developing robust investment programs will help secure higher returns, positively influencing overall profitability. Moreover, hiring finance, insurance, and risk management experts is essential for establishing appropriate retention limits and effectively mitigating potential risks. This expertise will bolster decision-making processes and foster a more resilient financial structure within these companies.

In an era where technological advancements are pivotal, embracing innovations such as electronic insurance policies and digital marketing becomes vital for maintaining profitability and safeguarding financial stability. Furthermore, investing in training programs for staff on effective digital marketing strategies will enable insurance companies to adapt to industry changes, thereby enhancing their competitive edge. Investing premium-generated funds in diverse sectors will contribute significantly to profitability, allowing companies to navigate market fluctuations easily. Lastly, insurance companies should focus on innovating new insurance products and portfolios that align with future market needs to meet evolving customer expectations and build shareholder trust.

Overall, this research contributes to the literature on financial performance in the insurance sector and offers practical insights for decision-makers in navigating profitability challenges in the Iraqi market. Future studies could expand upon this work by investigating additional factors influencing profitability, such as market dynamics and regulatory changes, thus providing a more comprehensive understanding of the industry's landscape.

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