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Evaluating Financial Performance in Jordan's Insurance Sector: A CARMEL Model Analysis

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Abstract

The main objective of the study is evaluation the financial performance of five selected operating Insurance Companies in Jordan(Jordan Insurance (JOIN), Middle East Insurance (MEIN), Al-Nisr Al-Arabi Insurance(AAIN), Gulf Insurance Group - Jordan(GIG), Solidarity First Insurance (FINS)) through the use of CARMEL model indicators by using the analytic descriptive method in collecting and analyzing data for the financial statements of the Jordan insurance sector During The period 2015– 2018. The study reveals strong capital adequacy across all firms, with ratios exceeding benchmarks, underscoring their resilience to financial shocks. However, moderate asset quality signals long-term risks if asset performance deteriorates. Reinsurance practices exhibited volatility, with retention ratios fluctuating between 34% and 84%, reflecting inconsistent risk-sharing strategies. While most firms maintained stable liquidity, AAIN faced recurrent cash shortages, highlighting liquidity management gaps. Management soundness metrics underscored workforce inefficiencies, emphasizing the need for enhanced training to improve operational effectiveness. Profitability analysis yielded mixed results: AAIN and FINS demonstrated consistent returns (ROE/ROA), whereas JOIN and GIG experienced sharp declines, with GIG's ROA plunging to -10.46% in 2017 due to significant losses. The findings reveal a sector with foundational stability but critical vulnerabilities. To strengthen long-term competitiveness, the study recommends prioritizing asset quality optimization, workforce upskilling, strategic reinsurance alignment, and rigorous liquidity oversight. These measures aim to mitigate risks, enhance profitability, and align Jordan's insurance sector with global best practices. This research provides actionable insights for regulators and industry leaders to foster sustainable growth in a dynamic economic landscape.

Keywords: *CARMEL, Insurance Companies, Capital Adequacy, Financial Performance, Insurance Sector, Liquidity, Jordan.*

Introduction

The financial sector serves as the backbone of a nation's economy, with a robust financial framework driving productivity and sustainable economic expansion. In Jordan, insurance companies stand out as pivotal non-bank financial entities. They contribute significantly to both economic and social development by mitigating risks tied to commercial activities, fostering public confidence through enhanced security, channeling savings into productive uses, and reallocating surplus funds to sectors facing deficits. This process not only stabilizes economic

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operations but also accelerates investment flows, reinforcing the nation's growth trajectory.

During the 1950s, the Jordanian market experienced significant growth in the domains of automobile insurance and marine transport. This development was driven by the necessity to unload goods at Aqaba Port, fostering the emergence of a robust automobile transport sector to facilitate inland logistics. Consequently, the demand for insurance services became increasingly evident, leading to the establishment of multiple insurance providers to address these needs. Among these, the Jordan Insurance Company holds the distinction of being the first Jordanian insurance enterprise, founded in the early 1950s.

The insurance sector in Jordan experienced steady growth, with the number of licensed entities rising to 23 companies by 2021, comprising 16 general insurers, 5 Takaful (Islamic-compliant) providers, and 2 reinsurance firms. The market remained concentrated among dominant players, including industry leaders like Jordanian Insurance and Mediterranean and Gulf Insurance.

The main objective of this paper is to analyze the financial performance of five selected Insurance Companies operating in Jordan (Jordan Insurance (JOIN), Middle East Insurance (MEIN), Al-Nisr Al-Arabi Insurance(AAIN), Gulf Insurance Group - Jordan(GIG), Solidarity First Insurance (FINS)). during the period (2015 – 2018) by applying CARMEL model which includes capital adequacy, assets quality, Reinsurance and actuarial, Management Soundness, Earning and Profitability, liquidity.

Literature Review

Over the past thirty years, research by the International Monetary Fund (IMF) has identified the CARMEL model as the most effective framework for evaluating the financial stability of insurance companies. A review of literature reveals several notable studies on this topic. For instance, (Salameh,H. 2022). tested 12 indicators obtained from the CARMEL model parameters using discriminate regression on the Amman Stock Exchange (ASE). Ten of the twelve indicators are significant factors, according to the data. The study also demonstrated that the CARMEL model is a useful tool for evaluating the financial stability of ASE insurance businesses, with a very slim chance of finding a discrepancy between actual and projected performance. Out of 19 firms, eight had the effect of deviation, and three of those were impacted by the type II error, or riskier deviation. According to the study's findings, insurance companies who adhere to the Jordan Insurance Federation's (JIF) standards are financially stable, and the CARMEL model is an important model.

Surya and Sudha (2020) developed a comprehensive set of quantitative financial health indicators for life and non-life insurers in India.

Jaloudi, M. M. (2019) indicated that Jordanian insurance companies experienced modest improvements in technical efficiency throughout the analyzed period. Additionally, annual assessments revealed notable disparities in efficiency levels across firms, as well as fluctuations in individual company performance year over year. The findings highlighted owners' equity as a critical internal factor driving efficiency, while insurer type, company size, and return on assets were also strongly linked to efficiency outcomes. These variables demonstrated significant correlations with the overall operational effectiveness of the firms.

Similarly, Chakraborty and Sengupta (2014) conducted a comparative analysis of two major Indian life insurance firms to assess their financial robustness. Ansari and Fola (2014) highlighted that while both public and private sector insurers in India were financially stable,

private firms demonstrated stronger capital reserves and reinsurance practices, underscoring a clear performance gap between the sectors.

From a global perspective, Das et al. (2003) aligned with IMF recommendations, advocating for standardized financial metrics combined with qualitative factors like ownership structures to monitor insurers' fiscal health. Greene and Segal (2004), in their study "Profitability and Economic Efficiency in the U.S. Life Insurance Industry" published in the Journal of Productivity Analysis, investigated the link between cost inefficiency and sustainability within the sector. They posited that a mature and adaptable life insurance market is pivotal for fostering long-term sustainability and operational efficiency. The research underscored that cost inefficiencies significantly overshadow profitability in the industry, with such inefficiencies inversely affecting performance indicators like equity income. These findings highlight the critical need for optimizing cost structures to enhance financial resilience in life insurance markets. These studies collectively reinforce the CARMEL model's relevance while illustrating the interplay of quantitative benchmarks and contextual factors in evaluating financial soundness.

Methodology

This study is descriptive and analytical based on the published financial statements of Insurance Companies in Jordan. This study covers five Insurance Companies These companies account for about 35% of the total assets in the Jordanian insurance sector. underscoring their dominant influence in the market. The study analysis relies mainly on annual reports by selected Companies. The study covers a four year period (2015 - 2018). For the purpose of the study, the research instrument used is the CARMEL Model ratios.

CARMEL Analysis & Findings

The following are the financial performance for selected Insurance Company of Jordan using CARMEL Model

Capital Adequacy

Capital Adequacy serves as a critical measure of an insurer's financial soundness. It acts as a safeguard for policyholders and the stability of the financial system by ensuring the company maintains sufficient capital to cover potential losses stemming from claims. Essentially, it reflects whether an insurer possesses the financial resilience to absorb unexpected setbacks while maintaining operational integrity.

Capital Adequacy = Capital /total assets ..... (1)

The capital to total assets ratio measures the share of a company's capital relative to its total assets, reflecting how effectively the company grows its asset base and deploys capital to generate assets. This ratio also reveals the degree to which assets are financed by equity (shareholders' funds) rather than debt. While there are no regulatory thresholds for this ratio, a lower ratio is generally favored (provided the company meets mandatory capital requirements) as it signals a robust asset foundation. Although a higher ratio might appear beneficial for short-term stability, a lower ratio is preferable in the long term, as it indicates greater asset strength and efficiency in capital utilization.(Surya, M. et 2020).

Company	2015	2016	2017	2018

MEIN	25%	24%	24%	26%
JOIN	40%	38%	33%	32%
AAIN	15%	14%	12%	11%
GIG	21%	19%	20%	21%
FINS	54%	49%	49%	47%

Table1. Capital Adequacy Ratio

Source: Author's compilation

The higher the capital adequacy ratio, the stronger the insurance company. As shown in table (1) capital to total assets ratio is good for the selected insurance companies. It's almost constant for MEIN and GIG, but for JOIN it's decreased from 40% in 2015 to 32% in 2018. Like that it was 15% for AAIN in 2015 and decreased to 11% in 2018. The company FINS achieved the highest percentage during the study period, which was 47% in 2018. Consequently the capital adequacy ratio is high for all concerned insurance company comparing to the measuring standards.

Asset Quality

A higher asset quality ratio is generally preferred, as it strengthens a company's financial stability and reduces insolvency risks by ensuring a larger portion of assets is financed through equity capital. Conversely, a lower ratio indicates a weaker margin of safety, exposing the company to greater financial risk if poor-quality assets erode profitability. In such cases, the likelihood of losses increases, potentially destabilizing the business. .(Surya, M. et 2020).

Asset Quality = Equities/Total assets ..... (2)

Company	**2015**	**2016**	**2017**	**2018**
MEIN	45%	48%	47%	45%
JOIN	45%	43%	39%	36%
AAIN	32%	28%	25%	22%
GIG	33%	31%	21%	24%
FINS	58%	55%	57%	54%

Table 2. Asset Quality Ratio

Source: Author's compilation

As shown in Table (2) Solidarity First Insurance (FINS) the higher ratio as compared to other selected insurers company and found to be very financial strong company as compared to other as its' Asset Quality ratio was 58% in 2015 and 54% in 2018.

The asset quality ratio in Jordanian insurance sector is generally regarded as moderate, which could lead to financial vulnerabilities over time. A ratio at this level suggests the industry may face challenges in sustaining long-term financial stability if asset performance declines.

Reinsurance and Actuarial

Reinsurance ratio is also known as risk retention ratio, this ratio indicates the risk bearing capacity of the country's insurance sector.

The retention ratio is calculated by subtracting the amount of reinsurance ceded from the gross

premiums written and then dividing the result by the gross premiums. This ratio reflects the portion of premiums an insurance company retains rather than transferring to reinsures. Retained earnings, derived from these premiums, represent profits that the company can allocate toward dividends for shareholders, reinvestment in business growth, or other strategic purposes. For investors, this metric offers insight into how much capital the company is channeling back into operations and the intensity of its reinvestment efforts. A low retention ratio may signal potential reliance on external financing, such as debt or equity issuance, to fund expansion. In the insurance context, "retention" specifically refers to the company's decision to retain both premiums and associated risks, rather than offloading them through reinsurance. This balance influences the firm's financial stability and capacity to self-fund future growth. (Lal Rohilla, 2023)

Retention Ratio= Net Premium/Gross Premium ..... (3)

Company	**2015**	**2016**	**2017**	**2018**
MEIN	44%	47%	45%	46%
JOIN	52%	52%	52%	53%
AAIN	84%	83%	84%	75%
GIG	45%	34%	38%	46%
FINS	47%	44%	43%	39%

Table 3. Reinsurance Ratio

Source: Author's compilation

The analysis Reinsurance ratio of selected Insurance Companies of Jordan shows fluctuation ranging from 34% to 84% during 2015 to 2018. As presented in Table (3), AAIN insurance companies have maintained a retention ratio exceeding 75% over the study period. This indicates their robust financial capacity to absorb risks internally and reduced dependence on reinsurance. Such a high retention ratio underscores the company's ability to self-sustain growth and manage underwriting risks independently, reflecting stronger financial resilience and strategic control over their operations.

Management Soundness

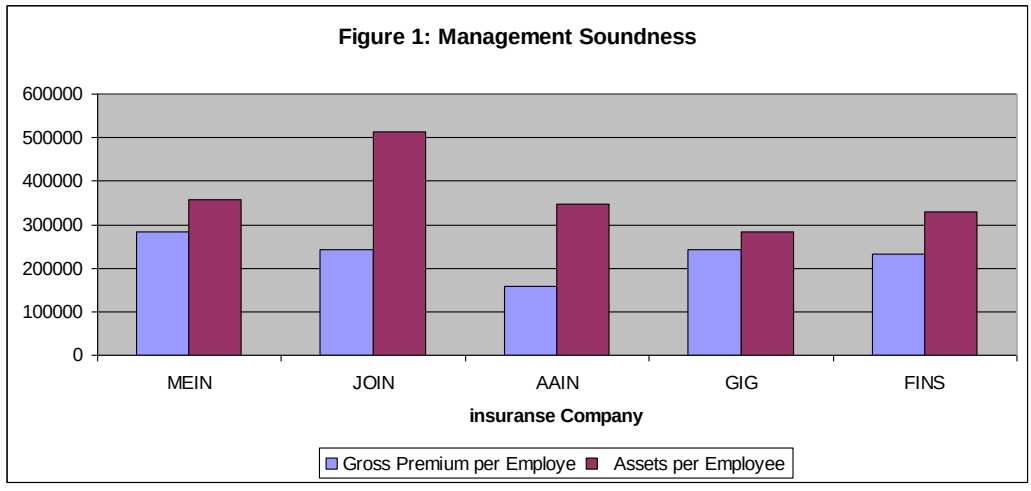
Management soundness reflects the operational effectiveness of a company's workforce, indicating how efficiently employees contribute to organizational success. This concept evaluates the quality of decision-making and its impact on business outcomes. Key indicators of sound management include cost effectiveness, prudent resource allocation, and alignment of expenses with strategic goals. Monitoring management soundness is vital for ensuring financial stability. For insurance companies, two specific ratios are used to assess this: .(Surya, M. et 2020).

Gross Premium per Employee : Measures revenue generation efficiency by comparing total premiums to the number of employees.

Management Soundness = Gross Premium / Number of employees..... (4)

Assets per Employee : Evaluates resource utilization by analyzing the value of assets managed per employee.

Management Soundness = Total assets / Number of employees..... (5)



Due to insufficient human resources data for individual companies, the analysis relied on 2018 figures from the annual report published by the Jordan Insurance Federation. Figure 1 reveals that MEIN company achieved the highest Gross Premium per Employee ratio, signifying strong workforce efficiency, While GIG company got the lowest percentage.

Conversely, JOIN company reported a notably high ratio in Assets per Employee in 2018, while AAIN company trailed with the lowest performance.

The Management Soundness Ratio across Jordan's insurance sector generally highlights that employees in the industry require enhanced training programs to improve the operational effectiveness of insurance companies. This ratio underscores a gap in workforce development that, if addressed, could strengthen organizational performance and governance within the sector.

Earning and Profitability

Profitability ratios evaluate how effectively a company converts its revenue into profits, serving as indicators of operational efficiency. These metrics gauge how well an organization utilizes its assets to generate income. Higher profitability ratios typically signal greater efficiency, as they reflect stronger earnings relative to revenue or assets. These ratios are most meaningful when applied in cross-industry comparisons or within the same sector, enabling stakeholders to benchmark performance. Elevated values in these ratios often correlate with superior resource management and financial health, offering insights into a company's competitive positioning and operational effectiveness. (Lal Rohilla, 2023).

Return on Equity (ROE) = Profit after Tax / Equity..... (6)

Return on Equity (ROA) = Profit after Tax / Total Assets..... (7)

This study used Return on Asset (ROA) & Return on Equity (ROE) ratios to measure earning ability of the insurance company to judge financial performance.

Company	2015	2016	2017	2018

MEIN	5.91	10.87	2.80	3.74
JOIN	1.84	3.43	-1.4	0.34
AAIN	11.46	12.18	9.56	12.19
GIG	12.79	3.56	-48.76	13.61
FINS	4.4	6.81	7.75	8.28

Table 4. Return on Equity ROE%

Source: Author's compilation

ROE judgment standard set that the higher the return the more productive efficient management in utilizing resources. As shown in table (4), JOIN has the lowest values of ROE in 2018 between selected insurance companies in this study. GIG has an acceptable ROE during study period except in 2018 it declined to -48.7%. AAIN has a strong & acceptable ROE ratio during study period.

Company	**2015**	**2016**	**2017**	**2018**
MEIN	2.66	5.25	1.32	1.70
JOIN	0.83	1.49	-0.55	0.13
AAIN	3.64	3.47	2.40	2.73
GIG	4.24	1.09	-10.46	3.21
FINS	2.56	3.75	4.41	4.5

Table 5. Return on Assets ROA%

Source: Author's compilation

As illustrated in Table 5, FINS maintained an acceptable Return on Assets (ROA) throughout the study period, while other firms also demonstrated favorable ROA ratios. A notable exception was GIG's Return on Asset (ROA), which plummeted to -10.46% by the end of 2017—contrasting sharply with its partial recovery to 3.2% in 2018. This sharp decline in ROA is likely linked to significant profit losses incurred by GIG during that period.

Liquidity

Liquidity is a crucial aspect of business operations, as it ensures a company's capacity to fulfill its short-term financial obligations. A high liquidity ratio indicates that the organization holds sufficient cash reserves or liquid assets, reflecting its ability to swiftly convert assets into cash to settle immediate liabilities. The higher the ratio, the greater the ease in repaying debts and avoiding payment defaults. This metric is vital for creditors evaluating a business's eligibility for short-term loans, as well as for prospective life insurance customers assessing the insurer's financial stability before purchasing policies. Poor liquidity can undermine a company's creditworthiness, damage its credit rating, and signal potential risks to stakeholders, making it a key indicator of financial health and operational reliability. (Lal Rohilla, 2023).

Liquidity reflects an insurance company's capacity to fulfill its financial obligations and convert assets into cash without incurring any losses. While excessive liquidity can negatively affect profitability, insufficient liquidity heightens the risk of insolvency, as noted by (Al-Abedallat ,2019). To measure liquidity levels within an insurance company, the Liquidity Ratio or Current Ratio is employed. A ratio exceeding 1 is deemed very strong, indicating that the company can settle all its liabilities using liquid assets alone within a short period, without needing to draw

from long-term investments or assets, as described by (Lal Rohilla,2023).

The optimal range for this ratio is typically 1.5 to 2.0. This reflects an organization's capacity to meet its current liabilities using current assets resources like cash, short-term investments, and outstanding premiums. A value below 1 could signal liquidity challenges, while a ratio above 2 might suggest inefficient allocation or underutilization of assets.

Liquidity Ratio (Current Ratio) = Current Asset / Current Liability ..... (8)

Company	2015	2016	2017	2018
MEIN	0.66	1.15	1.12	1.12
JOIN	2.24	2.86	3.02	2.34
AAIN	2.91	3.13	3.25	3.87
GIG	1.69	1.38	1.13	1.11
FINS	2.49	1.81	1.81	1.51

Table 6: Liquidity Ratio

Source: Author's compilation

From Table (6), it concluded that all selected company were showing sound liquid health during the study period, AAIN was not stable in this connection, there were cash crunch in it.

Conclusion

This study evaluates the financial performance of five Jordanian insurance companies (2015–2018) using the CARMEL S model, which examines six pillars: Capital Adequacy, Asset Quality, Reinsurance, Management Soundness, Earnings, and Liquidity. Key findings reveal a sector with robust capital Adequacy, as all firms exceeded capital adequacy standards, signaling strong financial resilience. However, moderate asset quality ratios suggest long-term risks if asset performance weakens, potentially undermining stability. The reinsurance ratio fluctuated significantly (34%–84%), reflecting inconsistent risk-sharing practices and potential over-reliance on reinsurance partners in certain years.

While liquidity health was generally sound across most companies, AAIN struggled with recurrent cash crunches, emphasizing the need for stricter liquidity management. Management soundness highlighted gaps in workforce training, underscoring the urgency of investing in employee development to enhance operational efficiency.

Earnings performance was mixed: JOIN recorded the lowest ROE in 2018, while GIG faced severe volatility, with ROE plunging to -48.7% and ROA dropping to -10.46% in 2017, likely due to profit losses. In contrast, AAIN maintained strong ROE, and FINS demonstrated stable ROA throughout the period.

To strengthen long-term sustainability, Jordan's insurance sector must prioritize asset quality optimization, workforce upskilling, and rigorous liquidity oversight. Addressing these areas will mitigate vulnerabilities, enhance profitability, and ensure competitiveness in a dynamic market.

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