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The Impact of Liquidity and Leverage on Financial Performance of Public Listed Firms in Jordan

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Abstract

This study investigates the impact of liquidity and leverage on the financial performance of public listed service firms in Jordan, offering insights into financial management in emerging economies. Using data from 38 service companies listed on the Amman Stock Exchange (2011–2021), the analysis focuses on financial metrics such as Current Ratio (CR), Cash Ratio (CHR), Quick Ratio (QR), Short-Term Debt (SD), Long-Term Debt (LD), Debt to Equity (DTE), and Earnings Per Share (EPS). Partial Least Squares Structural Equation Modeling (PLS-SEM) with PLS-SMART 4.1 was employed to analyze the data. The findings reveal that liquidity, particularly CR and CHR, positively influences financial performance, supporting the Pecking Order and Agency Cost Theories, while QR shows no significant impact. High leverage, especially LD and DTE, negatively affects performance, though SD has a positive relationship with EPS, aligning with the Trade-Off Theory. Control variables like Capital Intensity and Firm Size also significantly influence EPS, while Trading Volume and Firm Age do not. The study is limited to Jordanian service firms, and the findings may not apply to other sectors or regions. This research contributes to understanding financial management practices in emerging economies, offering valuable guidance for policymakers and managers to enhance financial sustainability and competitiveness.

Keywords: Liquidity, Leverage, Financial Performance

Introduction

Corporate financial performance is a critical area of study in corporate finance, especially for service companies operating in dynamic and competitive markets such as Jordan. Understanding the factors that influence financial outcomes is essential for both academic research and practical applications. This study examines the complex relationships between liquidity, leverage, and financial performance. By examining secondary data from Jordanian service companies, this research aims to provide valuable insights into how financial strategies impact a company's overall performance. It seeks to contribute to a broader understanding of financial management practices in emerging economies, highlighting the importance of effective liquidity management and wise leverage decisions. This study is

important because it is consistent with the findings of Cavusgil and Knight (2015) on the importance of competition between businesses and Al Ali and Abu Rumman (2019) on the effects of global financial crises on business.

Through a comprehensive analysis, this study seeks to provide practical recommendations to managers and policymakers with the aim of enhancing the financial sustainability and competitiveness of service companies in Jordan. Effective liquidity management and prudent leverage decisions are crucial for maintaining financial health and ensuring long-term growth. Previous research by Li et al. (2021) and Sahni & Kulkarni (2018) supports the role of financial performance in business operations, emphasizing that high financial performance attracts significant attention from managers and plays a vital role in the development of a firm. By integrating these insights, the study aims to offer actionable strategies that can help Jordanian service firms navigate financial challenges and capitalize on opportunities for improvement.

Despite extensive research on financial performance, there remains a significant gap in understanding the interplay between liquidity and leverage within the context of Jordanian service companies. Many studies have focused on developed economies, leaving a dearth of comprehensive analyses in emerging markets like Jordan. Previous research has predominantly examined the industrial and financial sectors, with limited focus on the service sector, which has unique characteristics and challenges. This study addresses this gap to exploring the specific dynamics of the Jordanian service sector, thereby providing insights that are more applicable and beneficial for local policymakers and business leaders. Moreover, some studies have examined the relationship between liquidity, leverage and financial performance in Jordanian sectors such as (Qwader, 2019; Shahwan, 2018; Rajha, 2016) which emphasized the challenges of liquidity and leverage in the Jordanian context, These studies recommended to study other important vital sectors in Jordan, such as the service sector, and also studying the largest possible indicators of liquidity and financial leverage variables to reach a clear understanding of the relationship between liquidity, financial leverage, and financial performance.

According to central bank of Jordan (2022) Jordanian service firms face multiple financial challenges, including liquidity constraints, high leverage. The scarcity of funds and high costs of obtaining them put managers under pressure to design a financial structure that balances debt and liquidity, ensuring the continuity of business operations rather than merely focusing on profitability. The increasing interest rates on loans further exacerbate these challenges, affecting the liquidity of companies and leading to financial strain. The service sector is witnessing an increase in the level of debt.

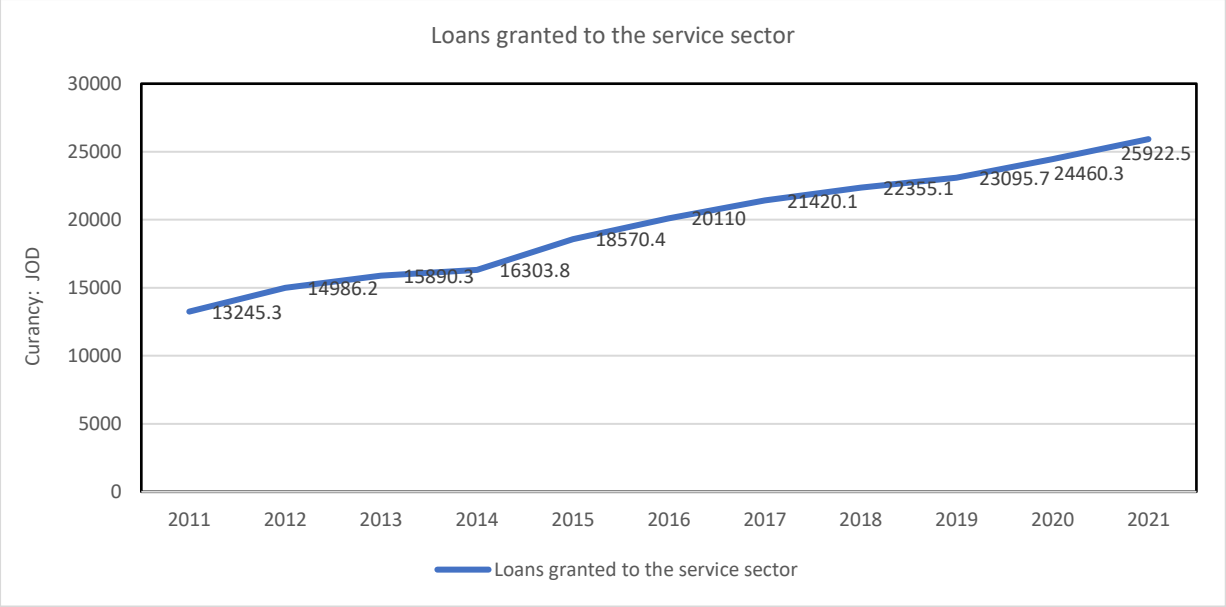

Figure 1. Loans granted to Jordanian companies in various sectors, Central Bank of Jordan, (2022).

In developing countries like Jordan, companies often face limited funding and high costs of obtaining it. This financial strain forces managers to balance debt and liquidity to ensure business continuity rather than focusing solely on profits and increasing investor wealth. Securing necessary funds is challenging due to the scarcity of funds and the varying costs and risks associated with financing (Abbas et al., 2021). According to the Development and Reconstruction of the European Bank (2020), over 70% of Jordanian companies experience difficulties in financing their operations.

Many studies, such as (Qwader, 2019; Shahwan, 2018; Rajha, 2016) indicated that there is a real issue for the business sectors in Jordan in terms of a significant rise in non-performing loans and the inability to repay due to weak liquidity and the increasing interest rates of loans in Jordan. The service sector witnesses fluctuations in the level of liquidity, as shown in Figure 1.2

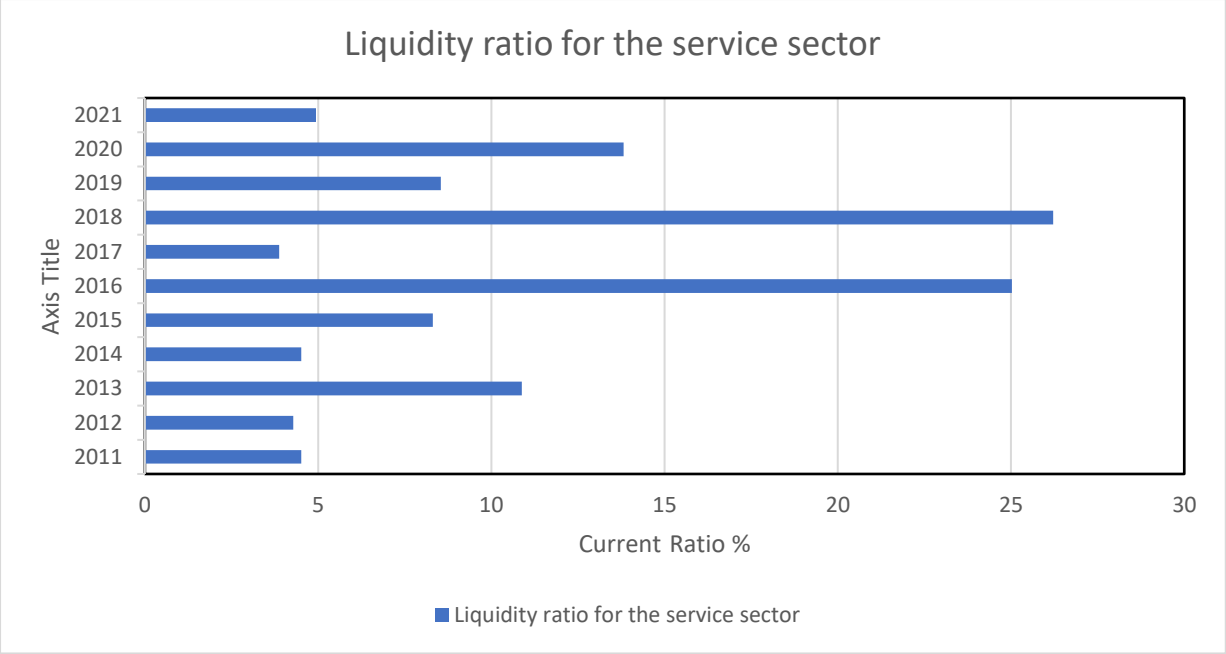

Figure 2. Liquidity ratio for the service sector ASE (2022)

By comparing Figure 1.1 with Figure 1.2, it becomes clear that the liquidity of the Jordanian service sector is not consistent with the service sector debts, as debts rise upward while there is a clear fluctuation in liquidity, which constitutes a serious matter in the company's solvency to repay debts and the resulting interest rate, which may lead to problems. Financial and ultimately bankruptcy. The services sector is witnessing fluctuations and declines in financial performance in terms of earnings per share, as shown in Figure 1.3

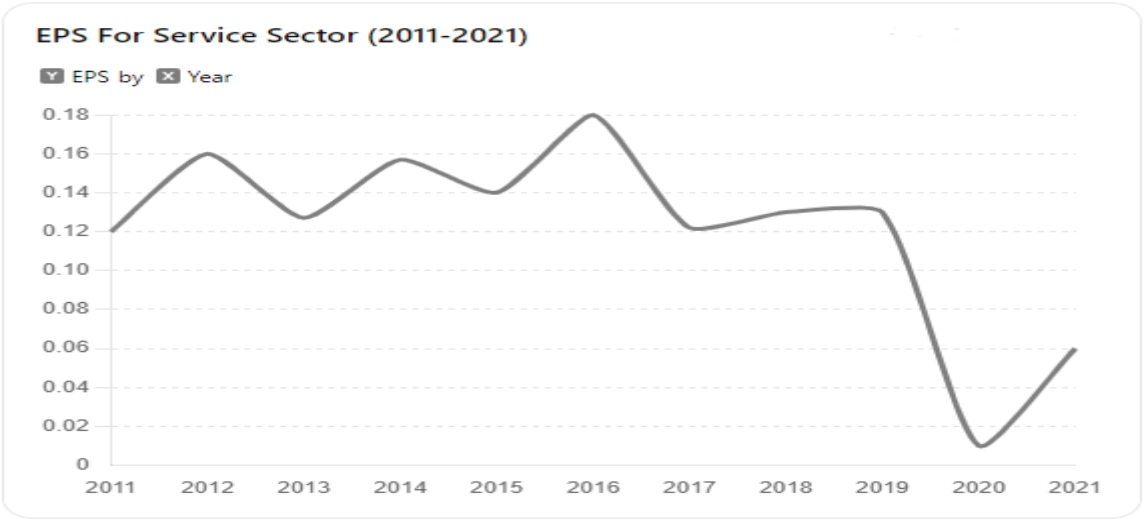

Figure 3. financial performance of service sector ASE (2022)

Despite what previous studies, such as such as (Qwader, 2019; Shahwan, 2018; Rajha, 2016) have indicated, that Jordanian companies suffer from real problems in financial performance, this study noted from Figure 1.4 that the Jordanian service sector comparison with other Jordanian sectors is one of the sector most facing real issues.

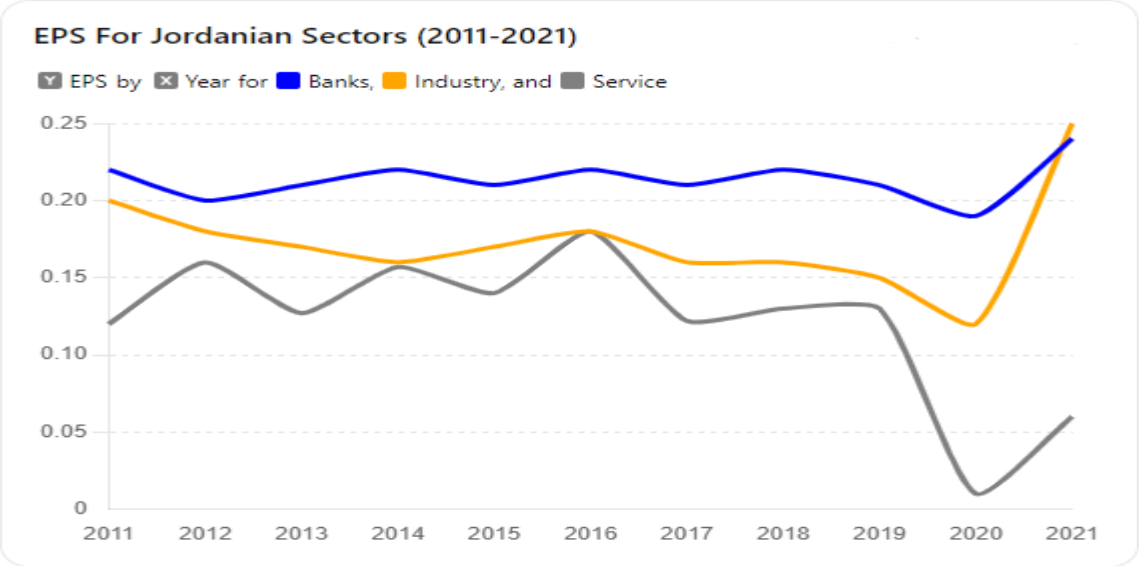

Figure 4. financial performance of Jordanian sectors ASE (2022)

According to the Amman Stock Exchange (2022), the number of service sector companies decreases year after year on the Amman Stock Exchange due to financial problems, the most important of which is bankruptcy. In addition to the Jordanian Securities Depository Center (2022), the Jordanian services sector has suffered in recent years from bankruptcy, mergers, and transformation, according to its annual report. Moreover, the services sector was most affected by the Corona pandemic and is still suffering until now and facing difficulty returning to what it was (Amman Chamber of Commerce, 2021).

Literature Review

The Pecking Order Theory suggests that firms prioritize their sources of financing according to the principle of least effort or least resistance, preferring to use internal financing first, and resorting to external financing only when internal funds are insufficient. This theory posits that because of asymmetric information between managers and investors, firms prefer to issue debt rather than equity when external financing is required. This hierarchy of financing reflects the costs of asymmetric information and is aimed at minimizing these costs. In the context of liquidity and leverage, the theory implies that firms with sufficient liquidity will primarily rely on their internal funds to finance operations and investments. Only when these internal funds are exhausted will firms turn to external debt, thereby increasing their leverage. Thus, liquidity serves as a primary buffer, reducing the need for external financing and associated costs, while leverage is considered a secondary option when internal funds are inadequate (Myers & Majluf, 1984).

The Agency Cost Theory, developed by Jensen and Meckling, addresses conflicts of interest between managers and shareholders, leading to agency costs like monitoring expenses, bonding expenditures, and residual loss. It emphasizes balancing financial decisions to align managerial and shareholder interests. Leverage, while limiting managers' ability to invest in non-value-maximizing projects by reducing free cash flow, introduces financial risks by increasing obligations for regular interest and principal payments, potentially leading to financial distress or bankruptcy. This necessitates higher monitoring costs to ensure effective use of borrowed funds. Conversely, adequate liquidity ensures sufficient cash flow to meet

short-term obligations and invest in profitable projects without excessive borrowing, acting as a financial buffer. It reduces financial risk and the need for external financing, lowering the costs of monitoring managerial behavior. Thus, liquidity supports operational flexibility, stability, and aligns managers' actions with shareholders' interests, enhancing overall firm performance (Jensen & Meckling, 1976).

The framework of this study as shown in Figure 1.5 is based on hierarchy theory and agency cost theory, which provide a comprehensive understanding of financial decisions within firms. Hierarchy theory suggests that firms prioritize internal financing, resorting to debt only when necessary, thus maintaining liquidity and managing leverage effectively (Myers and Majluf, 1984). At the same time, agency cost theory highlights the importance of balancing leverage and liquidity to mitigate conflicts of interest between managers and shareholders, and ensuring that managerial actions are consistent with shareholder value by reducing financial risk and agency costs (Jensen and Meckling, 1976). These theoretical perspectives form the basis for analyzing the impact of liquidity and leverage on financial performance in this study.

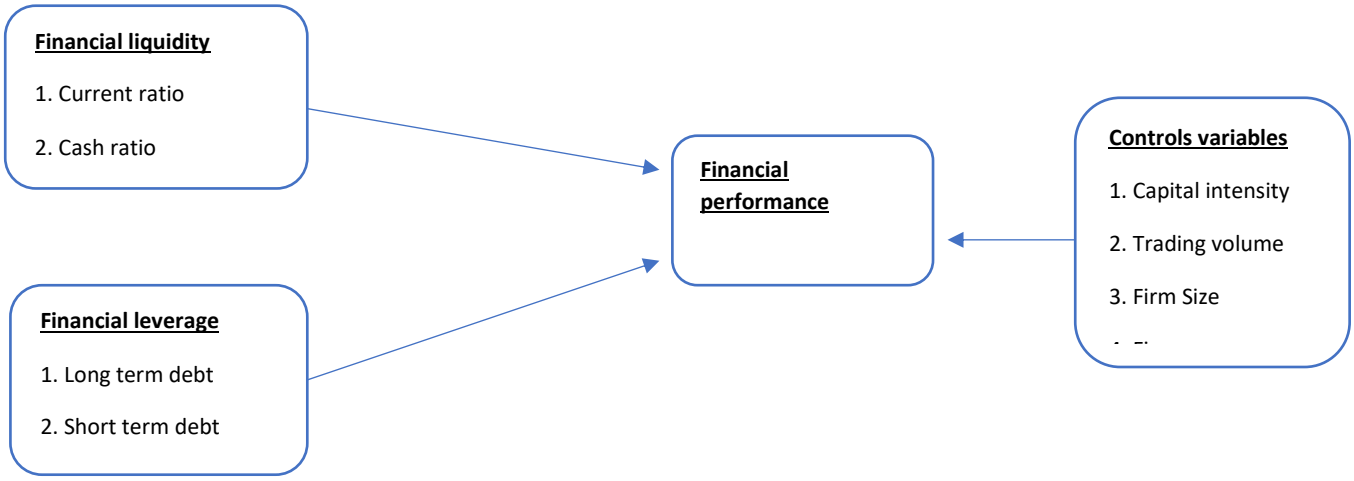

Figure 5. Research Framework

Effective liquidity management is essential for maximizing business benefits, as high liquidity alone does not guarantee improved financial performance. Companies must balance liquidity between investments and debt management. Firms with low current assets face barriers to profitability, leading to risky returns (Saravanan, 2011; Salem & Rehman, 2011). Tarigan et al. (2021), found that the current ratio, which measures a company's ability to cover short-term liabilities with short-term assets, is a critical indicator of financial health. For longer-term timeframes, lower liquidity may decrease earning power due to a higher demand for loans, reducing profitability (Khan et al., 2013; Rudin et al., 2016).

Durrah et al. (2016), investigated the relationship between liquidity ratios and financial performance indicators in eight industrial food companies listed on the Amman Bursa. They found a positive relationship between liquidity ratios (current ratio, quick ratio, cash ratio) and return on assets. Liquidity is considered an important element of the financial performance of a business, so it must be focused on when making decisions (Nasution, & Yusleny 2023). Firms with a higher current ratio are generally better positioned to manage working capital and operational needs. According to Brigham and Ehrhardt (2017),

maintaining adequate liquidity is crucial for avoiding financial distress and capitalizing on investment opportunities, thereby enhancing profitability (EPS).

Al-Taani (2013), examined liquidity management's impact on Jordanian manufacturing firms' profitability, revealing that a higher current ratio is associated with increased EPS. Firms with sufficient liquidity can better meet operational needs and seize investment opportunities, improving profitability and EPS. Al-Nimer et al. (2015) highlighted a positive correlation between the current ratio and EPS in Jordanian listed companies. Effective liquidity management enhances a company's ability to generate higher earnings per share, providing a competitive advantage. Mathews et al. (2021), measured liquidity and EPS ratios for publicly listed companies over five financial years (2015-2019). Their regression analysis revealed that the cash ratio significantly influences EPS. Similarly, Abushammala and Sulaiman (2014) emphasized that firms with a high cash ratio can seize more investment opportunities, ensuring sufficient capital for both planned and unexpected opportunities.

Nabeel and Hussain (2017), analyzed liquidity management's impact on profitability in Pakistan's banking sector. Using data from ten banks (2006-2015), they found an insignificant relationship between the quick ratio and EPS. Elangkumaran and Kartika (2013) examined the effects of liquidity, profitability, and risk on listed food, beverage, and tobacco companies in Sri Lanka. They concluded that liquidity had an insignificant impact on profitability. Effiong and Ejabu (2020), investigated liquidity risk management's effect on consumer goods companies' financial performance. They found that long-term debts, quick ratios, and cash defensive intervals significantly affected EPS and ROA, while cash ratio and long-term debts affected ROCE. Their study recommended incorporating a clear liquidity risk management approach in strategic policies and establishing risk warning dashboards to manage variability and volatility in this crucial sector.

Hence, and according to the theories related to the study and previous researchers, the current study indicates there is the positive impact of the liquidity on financial performance of Jordanian service firms. This leads to the following hypothesis:
H1: There is a positive effect of Liquidity on Financial Performance of the Jordanian service firms.
Accordingly, the first hypotheses can be formulated into the following sub-hypotheses:
H1a: There is a positive effect of current ratio on Earnings per share of Jordanian service firms.
H1b: There is a positive effect of cash ratio on Earnings per share of Jordanian service firms.
H1c: There is a positive effect of quick ratio on Earnings per share of Jordanian service firms.

Financial leverage refers to the use of debt to finance investments, where it must be ensured that the return from it covers the value of the debt in order to later achieve a return after covering the principal and interest of the debt. Because of the high leverage, earnings per share decrease, which poses a financial risk to shareholders. It is therefore recommended that a company take into account the optimal capital structure when making financing decisions to ensure that any increase in debt increases the value of the company and does not engage in significant risks that hurt the value of the company (Dakua, 2019).

Goyal (2013), examined the impact of leverage on the profitability of Indian public sector banks, finding a significant correlation between all profitability metrics (ROA, ROE, and EPS)

and short-term debt, and long-term debt. Similarly, Tayyaba (2013), found that leverage positively impacts earnings per share in the oil and gas sector, while operating leverage has an inverse relationship.

Abdullah and Tursoy (2021), proposed that pecking order theory predicts an inverse correlation between leverage and profitability, suggesting firms prioritize internal funds over external borrowing. Contrary, Hasan et al. (2014) found a positive relationship between short-term debt and EPS in Bangladeshi firms. Saeed et al. (2013) showed that short-term debt positively affects ROA, ROE, and EPS in the banking industry.

Salim and Yadav (2012) discovered a negative relationship between long-term debt and EPS in Malaysian companies. Similarly, studies by Le and Phung (2011), Mohammadzadeh et al. (2012), Tifow and Sayilir (2015), and Bokhari and Khan (2013) all reported a significant negative effect of long-term debt on EPS. Nugroho et al. (2020), and Tarigan et al. (2021), confirmed the negative impact of the debt-to-equity ratio on EPS in Indonesian companies. Abdel Maqsoud (2021), also found a negative relationship between debt-to-equity and EPS in Egyptian firms. These studies collectively highlight the adverse impact of high long-term debt on company profitability.

Hence, and according to the theories related to the study and previous researchers, the current study indicates there is the negative impact of the leverage on financial performance of Jordanian service firms. This leads to the following hypothesis:
H2: There is a negative effect of Leverage on Financial Performance of the Jordanian service firms.
Accordingly, the second hypotheses can be formulated into the following sub-hypotheses:
H2a: There is a negative effect of short term debt on Earnings per share of Jordanian service firms.
H2b: There is a negative effect of long term debt on Earnings per share of Jordanian service firms.
H2c: There is a negative effect of debt to equity on Earnings per share of Jordanian service firms.

Methodology

Data Selection and Collection

The type of data used in this study is quantitative data using secondary data in the form of company financial statements obtained from Amman Stock Exchange (ASE) and Annual report of Jordanian service companies.

Population and Sample

The study population includes all 38 service companies listed on the Amman Stock Exchange from 2011 to 2021. This sector is crucial for several reasons: it supports other sectors through essential services like human resources, transportation, and energy, and contributes 22% to the Jordanian GDP (Jordanian Ministry of Investment, 2022). Comprising health care, education, tourism, transportation, technology, communications, utilities, and energy, the services sector significantly impacts the economy by providing necessary services to other sectors and heavily relying on Jordanian human resources. It employs 42.5% of the workforce,

highlighting its importance in value-added accounts and its dependence on local production factors (Amman Chamber of Commerce, 2019).

Measurement and Operational Definition of Variables

Table 1

Measurement and Operational Definition of Variables

Independent Variables				**symbol**
Liquidity	**Current Ratio**: Assesses a company's capacity to fulfill its short-term obligations using its readily available short-term assets.	$Current\ Ratio = \frac{Current\ Assets}{Current\ Liabilities}$	(Dahiyat et al., 2021; Brigham & Houston, 2021)	CR
	Cash Ratio: A stricter liquidity indicator that evaluates a company's ability to settle short-term debts exclusively with cash and cash equivalents.	$Cash\ Ratio = \frac{Cash}{Current\ Liabilities}$	(Maisharoh & Riyanto, 2020; Batchimeg, 2017).	CHR
	Quick Ratio: Gauges a company's efficiency in covering short-term liabilities with its most liquid assets, excluding inventory.	$Quick\ Ratio = \frac{Cash + Accounts\ \text{Receivable}}{Current\ Liabilities}$	(Wardiyah, 2017; Sukamulja, 2019)	QR

Leverage	**Short-Term Debt**: Represents the portion of a company's financing that comes from obligations due within one fiscal year.	$Short\ term\ debt\ = \frac{Short\ Term\ Debt}{Toal\ Assets}$	(Mahmood et al., 2019; Nurwani & Syafina, 2022).	SD
	Long-Term Debt: Indicates the share of a company's financing sourced from obligations extending beyond a single fiscal year.	$Long\ term\ debt\ = \frac{Long\ Term\ Debt}{Total\ Assets}$	(Mahmood et al., 2019; Nurwani & Syafina, 2022).	LD
	Debt to Equity Ratio: Evaluates the relationship between a company's total liabilities and its shareholders' equity, offering insights into its financial leverage and capital structure.	$Debit\ to\ equity = \frac{Total\ liabilities}{Total\ equity}$	(Abu Abbas et al., 2021; Ajuandem, 2020)	DTE
Dependent Variable				

Financial performance	Earnings Per Share (EPS): A key profitability metric that indicates the portion of a company's net income attributed to each outstanding share of common stock.	Earnings Per Share $= \frac{Net\ Income - Preferred\ Dividendsn}{Average\ outstanding\ common\ sha}$	(Das & Swain, 2018; Emmanuel, 2022)	EPS
Control Variables				
Capital Intensity	**Capital Intensity**: Indicates the ratio of fixed assets to total assets, demonstrating the extent to which a company depends on capital investments for its operations.	$Capital\ Intensity = \frac{Fixed\ Assets}{Total\ Assets}$	(Widyastuti et al., 2022; Oeta et al., 2019)	CI
Trading Volume	**Trading Volume**: Represents the total number of shares exchanged within a given time frame, offering insights into	*Trading Volume = Sum Value traded for shares*	(Chang et al., 2017; Ichsani & Suhardi, 2015)	TV

	market activity and the confidence of investors.			
Firm size	**Firm Size**: Measured by the total number of employees, it reflects the scale of operations and organizational stability.	*Firm Size = Number of Employees*	(Xie et al., 2022; Drempetic, 2020)	SIZ
Firm age	**Firm Age**: Calculated based on the years since the company's establishment, it serves as a measure of its experience and long-term stability.	*Firm Age = The Year of the Research – The Year the firm Started*	(Rahman, 2022; Coad et al., 2013)	AGE

Results and Discussion

Descriptive Statistics

Table 2, presents the descriptive statistics, which include the maximum, minimum, mean, and standard deviation values for the sample of Jordanian service companies over the past 11 years (2011-2021). The data were sourced from the Amman Stock Exchange and the companies' annual reports.

Table 2
Descriptive Statistics

Variable	**N**	Mean	**Min**	**Max**	**Std.Deviation**
EPS	418	0.086	-0.371	0.521	0.146
CR	418	1.179	0.105	2.923	0.647
CHR	418	0.277	0.001	1.328	0.335
QR	418	0.779	0.011	2.635	0.568
SD	418	0.249	0.018	0.803	0.169
LD	418	0.054	0.000	0.280	0.073
DTE	418	0.430	0.001	1.520	0.338
CI	418	0.445	0.000	0.989	0.319
TV	418	5961480.70	1527.00	64831223.00	10926583.40
SIZ	418	624.52	1.00	3830.00	766.54
AGE	418	21.40	2.00	83.00	16.19

The descriptive statistics provide a summary of the key variables used in this study, including mean, minimum, maximum, and standard deviation values. Earnings Per Share (EPS), a measure of a firm's profitability, has a mean of 0.086, ranging from -0.371 to 0.521, with a standard deviation of 0.146. This reflects moderate variability in earnings among the firms. Current Ratio (CR), indicating liquidity, averages 1.179, with values between 0.105 and 2.923, and a standard deviation of 0.647, suggesting significant variation in liquidity positions. Cash Ratio (CHR), showing the ability to cover short-term liabilities with cash, has a mean of 0.277, a range of 0.001 to 1.328, and a standard deviation of 0.335, indicating high variability in cash holdings. Quick Ratio (QR), another liquidity measure excluding inventory, averages 0.779, ranging from 0.011 to 2.635, with a standard deviation of 0.568, reflecting considerable variability in meeting short-term obligations.

Short-term Debt (SD), representing the proportion of total assets financed by short-term debt, has a mean of 0.249, with values between 0.018 and 0.803, and a standard deviation of 0.169, indicating moderate variability. Long-term Debt (LD), accounting for long-term financing, averages 0.054, ranging from 0.000 to 0.280, with a standard deviation of 0.073, showing relatively low levels and variability. Debt to Equity (DTE) ratio, indicating capital structure, averages 0.430, with values between 0.001 and 1.520, and a standard deviation of 0.338, reflecting significant variability.

Capital Intensity (CI), measuring the proportion of fixed assets, has a mean of 0.445, ranging from 0.000 to 0.989, and a standard deviation of 0.319, indicating substantial variation in fixed asset investment. Trading Volume (TV), representing the volume of shares traded, has a mean of 5,961,480.70, ranging from 1,527.00 to 64,831,223.00, with a standard deviation of 10,926,583.40, indicating a wide range of trading activities. Firm Size (SIZ), measured by the number of employees, has a mean of 624.52, with values ranging from 1.00 to 3,830.00, and a standard deviation of 766.54, reflecting considerable differences in the scale of operations. Firm Age (AGE), measured by the number of years since establishment, averages 21.40, with values ranging from 2.00 to 83.00, and a standard deviation of 16.19, indicating moderate variability in firm age. These statistics highlight the diversity and variability within the sample of Jordanian service firms, essential for understanding the relationships between liquidity, leverage, financial performance.

Variance Inflation Factor (VIF)

The table presented is a Variance Inflation Factor (VIF) matrix generated by Smart-PLS. VIF values are used to detect multicollinearity among the predictor variables in a regression model. Multicollinearity occurs when predictor variables are highly correlated, leading to inflated variances of the regression coefficients, which can make the estimates unstable and difficult to interpret (Hair et al., 2010).

Table 3
VIF

Variable	VIF
CR	2.136
CHR	2.054
QR	2.674
SD	1.765
LD	1.389
DTE	1.487
CI	1.544
TV	1.253
SIZ	1.760
AGE	1.238

The Variance Inflation Factor (VIF) values for the variables in this study indicate that multicollinearity is not a significant concern. Current Ratio (CR) has a VIF of 2.136, Cash Ratio (CHR) is at 2.054, and Quick Ratio (QR) is at 2.674, all suggesting moderate multicollinearity for these liquidity measures. Short-Term Debt (SD) has a VIF of 1.765 and Long-Term Debt (LD) is at 1.389, indicating low multicollinearity for these debt measures. Debt to Equity (DTE) shows a VIF of 1.487, reflecting low multicollinearity in the financial leverage. Capital Intensity (CI) has a VIF of 1.544, indicating low multicollinearity in fixed asset investment. Trading Volume (TV), with a VIF of 1.253, Firm Size (SIZ) at 1.760, and Firm Age (AGE) at 1.238. The results indicate that all VIF values are below the commonly accepted threshold of 10 Hair et al. (2010).

R-Square

The R-Square test was utilized to determine the extent to which the independent variable could account for variations in the dependent variable. Ideally, the resulting value should lie between 0 and 1, indicating the proportion of variance explained (Rigdon, 2012). As a general guideline, Cohen (1988) suggested R2 values for endogenous latent variables are assessed as follows: 0.26 (substantial), 0.13 (moderate), 0.02 (weak).

Table 4
R-Square

	R-square	R-square adjusted
EPS	0.356	0.340

The R-Square for EPS is 0.356, meaning 35.6% of the variance in EPS is explained by the independent variables. The Adjusted R-Square is 0.340, accounting for the number of predictors and indicating that 34.0% of the variance in EPS is explained, offering a more accurate measure of the model's explanatory power. The R-Square is substantial explained due 0.356>0.26 (Cohen 1988).

F-Square

The effect size is the measure of influence of each independent variable on the dependent variable. . In PLS path model, when an independent variable is excluded from the model, it measures the variation in squared correlation values and ascertain whether the excluded independent variable has a strong effect on the value of dependent variable. The impact of predictor variable is high at the structural level if F-Square is 0.35 and it is medium if F-Square is 0.15 and small if F- Square is 0.02 (Cohen 1988).

Table 5
F-Square

Variable	**F**-square **(EPS Model)**
CR	0.034
CHR	0.063
QR	0.000
SD	0.049
LD	0.047
DTE	0.030
CI	0.033
TV	0.001
SIZ	0.021
AGE	0.000

Overall, the F-Square values suggest that while some variables like CR, CHR, LD, SD, DTE, CI, and SIZ have a small but notable effect on EPS, others like AGE, QR, and TV have negligible contributions to the model.

Q-Square

Q-Square is a measure used to evaluate the predictive relevance of a model in PLS-SEM (Partial Least Squares Structural Equation Modeling). It indicates how well the observed values are reconstructed by the model and its parameter estimates. A positive Q^2 value suggests that the model has predictive relevance for a certain endogenous construct. Typically, Q^2 values greater than zero imply that the model has sufficient predictive power (Hair et al, 2013).

Table 6
Q-Square

	Q^2predict	RMSE	MAE
EPS	0.320	0.830	0.626

The Q^2predict value for EPS is 0.320, indicating moderate predictive relevance. The RMSE is 0.830, suggesting a moderate level of prediction accuracy by measuring the average error magnitude. The MAE is 0.626, indicating that the model's predictions are reasonably close to the actual values on average.

Hypothesis Test
In this study, the path coefficients were estimated using Partial Least Squares Structural Equation Modeling (PLS-SEM) to determine the significance and strength of the relationships between liquidity, leverage, and financial performance. To determine the significance of these relationships, a PLS bootstrapping procedure is conducted following the PLS algorithm calculation, which generates t-values. For one-tailed tests, commonly used critical values are 1.645 for a 95% significance level and 2.33 for a 99% significance level (Ramayah et al, 2018). Figure 6 shows the structure model study PLS-SMART.

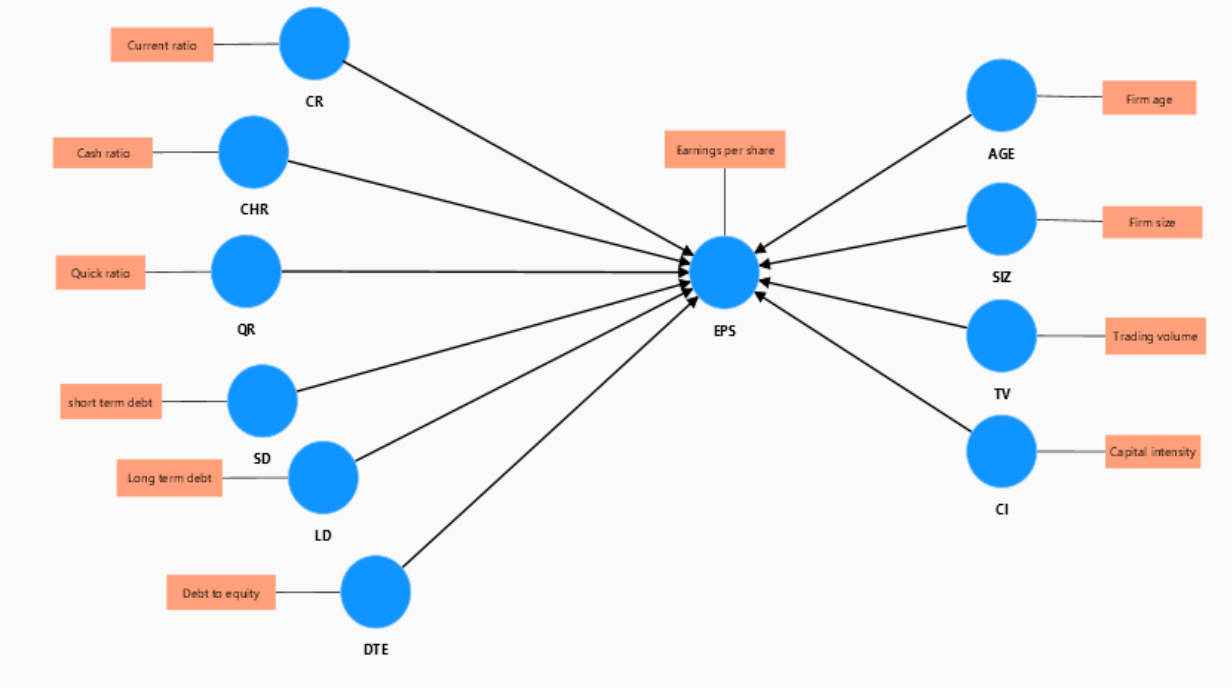

Figure 6 the structure model study PLS-SMART

Path Coefficient Analysis

Table 7

Path Coefficient

Hypothesis		Path	Original Sample	T Statistics	P Values	Result
H1	H1a	CR -> EPS	0.215	5.153	0.000	Support
	H1b	CHR -> EPS	0.288	5.151	0.000	Support
	H1c	QR -> EPS	0.018	0.318	0.375	Not Support
H2	H2a	SD -> EPS	0.237	3.541	0.000	Not Support
	H2b	LD -> EPS	-0.205	3.968	0.000	Support
	H2c	DTE -> EPS	-0.169	3.279	0.001	Support
Controls Variables		CI -> EPS	-0.180	3.835	0.000	Effect
		TV -> EPS	0.023	0.605	0.273	Not Effect
		SIZ -> EPS	0.154	2.846	0.002	Effect
		AGE -> EPS	0.008	0.188	0.425	Not Effect

The hypothesis testing results for the impact of various financial indicators on Earnings Per Share (EPS) among Jordanian service companies are presented in the table. The relationships between different independent variables and EPS were examined using path coefficients, T-statistics, and p-values to determine statistical significance. For liquidity measures, both Current Ratio (CR) and Cash Ratio (CHR) exhibited positive and significant relationships with EPS (CR: 0.215, T=5.153, p=0.000; CHR: 0.288, T=5.151, p=0.000), indicating that higher liquidity positively influences financial performance. However, the Quick Ratio (QR) did not show a significant impact on EPS (0.018, T=0.318, p=0.375). Which indicates that the results support H1 by H1a and H1b. Regarding leverage measures, Short-Term Debt (SD) had a significant positive relationship with EPS (0.237, T=3.541, p=0.000). Long-Term Debt (LD) and Debt to Equity (DTE) both had significant negative impacts on EPS (LD: -0.205, T=3.968, p=0.000; DTE: -0.169, T=3.279, p=0.001), suggesting that higher leverage can detract from financial performance. Which indicates that the results support H2 by H1b and H1c. Among the control variables, Capital Intensity (CI) and Firm Size (SIZ) significantly influenced EPS (CI: -0.180, T=3.835, p=0.000; SIZ: 0.154, T=2.846, p=0.002), while Trading Volume (TV) and Firm Age (AGE) did not show significant effects (TV: 0.023, T=0.605, p=0.273; AGE: 0.008, T=0.188, p=0.425). These findings highlight the differential impact of liquidity and leverage measures on the financial performance of Jordanian service firms, with control variables demonstrating significant predictive power.

Discussion

Liquidity and Financial Performance

The findings from the hypothesis testing revealed several critical insights into the relationships between liquidity, leverage, and financial performance among Jordanian service firms. The Current Ratio (CR) and Cash Ratio (CHR) both exhibited positive and significant relationships with Earnings Per Share (EPS). Specifically, the path coefficients were 0.215 (T=5.153, p=0.000) and 0.288 (T=5.151, p=0.000), respectively, indicating that higher liquidity enhances financial performance. This aligns with previous studies by (Al-Nimer et al, 2015; Al-Taani, 2013; Mathews et al, 2021; Abushammala and Sulaiman, 2014), which highlighted the importance of effective liquidity (current and cash ratios) management in generating higher earnings per share. The significant positive impact of these liquidity measures underscores

their role in ensuring firms can meet short-term obligations and seize investment opportunities, thereby improving profitability.

Conversely, the Quick Ratio (QR) did not significantly impact EPS (0.018, T=0.318, p=0.375), suggesting that excluding inventories from liquidity calculations may not provide a complete picture of a firm's financial health in this context. This aligns with previous studies by (Nabeel and Hussain, 2017; Elangkumaran & Kartika 2013), they also found an insignificant relationship between the quick ratio and profitability, indicating that other liquidity measures might be more relevant for financial performance assessment.

These results align with the Pecking Order Theory, which posits that firms prioritize internal financing over external financing to avoid the costs associated with asymmetric information (Myers & Majluf, 1984). Firms with higher liquidity can utilize their internal funds, thereby reducing the need for external borrowing and the associated costs. Additionally, the Agency Cost Theory suggests that maintaining adequate liquidity can reduce agency costs by aligning the interests of managers and shareholders, ensuring that managers have sufficient resources to meet short-term obligations without resorting to costly external financing (Jensen & Meckling, 1976).

Leverage and Financial Performance

The impact of leverage on financial performance yielded mixed results. Short-Term Debt (SD) showed a significant positive relationship with EPS (0.237, T=3.541, p=0.000), supporting the notion that short-term borrowing can effectively boost financial performance when managed prudently. This finding is in line with (Goyal 2013, Hasan et al, 2014; Saeed et al, 2013), they found that short-term debt positively influences profitability metrics.

However, Long-Term Debt (LD) and Debt to Equity (DTE) had significant negative impacts on EPS, with path coefficients of -0.205 (T=3.968, p=0.000) and -0.169 (T=3.279, p=0.001), respectively. These results highlight the detrimental effects of high long-term leverage and a debt-to-equity on financial performance, corroborating studies by (Diroh et al, 2023; Salim and Yadav, 2012; Le and Phung, 2011; Bokhari and Khan, 2013; Mohammadzadeh et al, 2012; Tifow and Sayilir, 2015). High long-term debt increases financial risk and interest obligations, which can strain cash flow and reduce profitability. Similarly, a high debt-to-equity ratio indicates a heavier reliance on debt financing compared to equity, exacerbating financial risks and leading to higher interest costs that diminish earnings per share. This underscores the importance of maintaining a balanced approach to financing to mitigate risks and enhance financial stability.

These findings are consistent with the Pecking Order Theory, which suggests that firms with higher leverage may face higher costs of external financing, thereby negatively impacting financial performance (Myers & Majluf, 1984). The Agency Cost Theory also supports this view, highlighting that high leverage can increase agency costs due to the need for monitoring and controlling managerial behavior to ensure that debt is used effectively (Jensen & Meckling, 1976). Additionally, the Trade-Off Theory suggests that firms must balance the benefits of debt, such as tax shields, against the costs of potential financial distress and bankruptcy, which can adversely affect profitability (Kraus & Litzenberger, 1973).

Control Variables

Among the control variables, Capital Intensity (CI) and Firm Size (SIZ) significantly influenced EPS. Capital Intensity had a negative effect on EPS (-0.180, T=3.835, p=0.000), suggesting that high investment in fixed assets might not always translate to better financial performance, possibly due to inefficiencies or high depreciation costs Triayuni & Laksana (2023). Firm Size positively impacted EPS (0.154, T=2.846, p=0.002), indicating that larger firms benefit from economies of scale and greater market presence, enhancing profitability. This aligns with previous studies by (Akram et al, 2021; Sudiyatno et al, 2020).

Trading Volume (TV) and Firm Age (AGE) did not show significant effects on EPS, with path coefficients of 0.023 (T=0.605, p=0.273) and 0.008 (T=0.188, p=0.425), respectively. This suggests that the number of shares traded and the age of the firm do not have a substantial impact on earnings per share within the context of Jordanian service companies. The non-significant impact of trading volume implies that fluctuations in share trading activities do not directly influence the profitability metrics of these firms. it is contrast to these studies(Chang et al (2017, Ichsani, & Suhardi, 2015). Similarly, the lack of significant effect of firm age indicates that the number of years a company has been in operation does not necessarily correlate with its current profitability. it is contrast to these studies (Akben-Selcuk, 2016; Samosir, 2018).

Conclusion

This study provides valuable insights into the interplay between liquidity, leverage, and financial performance among Jordanian service firms. Effective liquidity management, particularly through maintaining adequate current and cash ratios, is crucial for enhancing profitability. Conversely, excessive long-term debt can negatively impact financial performance, highlighting the need for prudent leverage management. The findings underscore the importance of balancing liquidity and leverage to ensure financial stability and sustainability.

The study's findings align with key financial theories, including the Pecking Order Theory, which suggests firms prefer internal financing to avoid the costs of external financing (Myers & Majluf, 1984). This theory explains why higher liquidity positively impacts financial performance. The Agency Cost Theory further supports the role of liquidity in reducing agency costs by aligning managers' and shareholders' interests (Jensen & Meckling, 1976). Conversely, the negative impact of high leverage on financial performance is consistent with both the Agency Cost Theory and the Trade-Off Theory, which highlights the need to balance the benefits of debt against its potential costs (Kraus & Litzenberger, 1973).

These insights can inform policymakers and managers in developing strategies to improve financial performance and support the growth of the service sector in Jordan. Effective liquidity management and cautious leverage use are essential for enhancing the financial stability and competitiveness of Jordanian service firms. Future research could explore the long-term impacts of these financial strategies and their implications for different sectors within emerging economies, providing a broader understanding of financial management practices.

This study has several limitations. The sample is restricted to Jordanian service companies listed on the Amman Stock Exchange, which may limit the generalizability to other sectors or regions. The specific economic and market conditions in Jordan might influence the relationships studied. The study period from 2011 to 2021 may not capture more recent economic events. Using secondary data might introduce biases or inaccuracies. Additionally, the focus on specific financial metrics like EPS may not fully represent all aspects of financial performance. Future research could benefit from a broader set of performance indicators and a more diverse sample. The reliance on statistical methods assumes linear relationships, which may not fully capture the complexity of interactions between liquidity, leverage, and financial performance. Future studies could explore non-linear models or alternative methodologies for a more nuanced understanding.

Theoretical and Contextual Contribution

This research contributes to the existing body of knowledge both theoretically and contextually by addressing critical gaps in the literature and offering new insights into the financial dynamics of service sector firms. Theoretically, the study integrates key financial constructs such as liquidity and leverage, analyzing their interrelationships and impacts on firm performance through established frameworks like the pecking order theory and agency cost theory. By empirically validating these relationships within the context of Jordanian service companies, the research extends the application of these theories to developing economies, where such investigations are sparse.

Contextually, the study provides valuable insights into the financial practices and challenges faced by Jordanian service firms, a vital yet under-researched sector in the region. By highlighting the sector's unique characteristics, including its reliance on human capital and its substantial contributions to the national GDP, this research underscores the importance of tailored financial strategies for improving firm sustainability and competitiveness. The findings serve as a practical guide for policymakers and financial managers, offering evidence-based recommendations to enhance financial decision-making, optimize liquidity and leverage strategies with long-term objectives. This dual contribution positions the research as a significant addition to the academic and practical understanding of financial management in emerging economies.

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