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THE EFFECT OF DEBT CAPITAL ON FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN BOSSASO, SOMALIA

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Abstract

This study examined the effect of debt capital on the financial performance of commercial banks in Bosaso, Somalia. A cross-sectional survey research design was adopted, targeting 247 employees from International Bank of Somalia, Premier Bank, and Salaam Bank. A sample of 152 respondents was selected using Slovene's formula, and data were collected through questionnaires and interviews. The content validity index (CVI) of 0.846 confirmed instrument validity, while a high response rate of 98.6 percent for questionnaires and 88.8 percent for interviews was achieved. Descriptive statistics, Pearson correlation, and regression analysis were employed to analyze the data. The findings revealed that debt capital management was moderate (mean = 3.36), with banks demonstrating strength in long-term debt acquisition (mean = 3.79) and collateral-based lending (mean = 3.51), while facing challenges in accessing central bank liquidity (mean = 3.00). Financial performance was rated fair overall (mean = 3.15), with operational scheme expansion rated good (mean = 3.66). The correlation analysis revealed a strong positive relationship between debt capital and financial performance ($r = 0.619$, $p = 0.000$), and regression analysis showed that debt capital explained 38.3 percent of the variance in financial performance ($R^2 = 0.383$) with a significant positive effect ($B = 0.658$, $t = 9.284$, $p = 0.000$). Consequently, the null hypothesis was rejected, confirming that debt capital has a statistically significant positive effect on financial performance. The findings validated both the Trade-Off Theory and the Modigliani and Miller (1958) theorem within Somalia's post-conflict banking context. The study recommended that bank managers enhance deposit mobilization strategies, regulators strengthen institutional frameworks for debt capital utilization, and policymakers address structural constraints limiting financial sector development.

Keywords: Debt capital, Financial performance, Commercial banks, Trade-Off Theory, Modigliani and Miller theorem, Bosaso, Somalia, Post-conflict economy, Capital structure, Customer deposits

Introduction

The relationship between debt capital and financial performance represents a fundamental concern in banking sector analysis, particularly within fragile and post-conflict economies where financial intermediation mechanisms remain under development. Commercial banks operate within a unique financial structure where debt capital primarily customer deposits and borrowed funds constitutes the primary raw material for their lending and investment activities, distinguishing them from non-financial firms that typically utilize debt as a leverage tool rather than their core operational input. This distinction assumes particular significance in contexts like Somalia, where the banking sector has demonstrated remarkable resilience despite operating amidst political instability, institutional fragility, and ongoing security challenges. The Central Bank of Somalia's recent establishment of the

Financial Stability Committee in November 2025 marks a historic step toward strengthening systemic risk governance, with the committee's inaugural meeting attended by senior officials and a high-level representative from the International Monetary Fund, reflecting both the sector's growth and the increasing recognition that prudent capital management directly influences banking sector stability (Central Bank of Somalia, 2025). As Somalia's commercial banks navigate a dollarized economy with shallow credit markets and limited monetary policy transmission mechanisms, understanding how debt capital deployment affects financial performance becomes essential for informing both managerial decisions and regulatory frameworks.

The Somali banking sector has undergone substantial transformation over the past decade, evolving from informal remittance-based operations toward more structured financial intermediation. Current data from the Central Bank of Somalia indicates that banking sector assets reached US$2.0 billion in 2024, with profitability improving to US$9.0 million in net profit and capital adequacy remaining strong at 19 percent, suggesting that banks have maintained prudential buffers despite operating in a challenging environment (Central Bank of Somalia, 2025). However, access to formal financial services remains limited, with recent analysis indicating that over 69 percent of adults remain excluded from formal banking, while mobile money services have achieved remarkable penetration reaching 84 percent of the adult population (Ali, 2026). This digital-financial divide creates unique dynamics for debt capital mobilization, as traditional deposit mobilization competes with mobile money platforms that dominate retail transactions. Furthermore, the sector faces structural challenges including persistent dollarization, liquidity constraints, and governance gaps that complicate the relationship between debt capital utilization and financial outcomes (ODI, 2025).

The thirteen licensed commercial banks operating in Somalia, concentrated primarily in urban centers, must therefore manage debt capital within an environment characterized by limited investment channels, Islamic banking compliance requirements, and the absence of deposit protection mechanisms that might otherwise enhance depositor confidence and capital stability.

Recent regulatory developments and international engagement have created new imperatives for understanding debt capital dynamics in Somali banking. The World Bank's debt relief initiative, culminating in Somalia reaching the Heavily Indebted Poor Countries completion point in December 2023, secured US$4.5 billion in debt relief and reduced Somalia's external debt from 64 percent of GDP in 2018 to less than 6 percent by the end of 2023, strengthening the central bank's regulatory capacity and intensifying focus on financial sector governance (World Bank, 2024). Concurrently, the development of national payment infrastructure, including Real-Time Gross Settlement systems and Automated Clearing House platforms processing over US$1.9 billion in transactions, has begun formalizing financial flows that previously operated through informal channels (Central Bank of Somalia, 2025).

These developments occur alongside persistent challenges: remittance inflows totaling US$1.73 billion annually continue to play a critical role in household livelihoods, contributing approximately 13.6 percent of GDP, while correspondent banking relationships remain vulnerable to disruption (The EastAfrican, 2024; World Bank, 2024). Within this complex landscape, commercial banks in Bosaso as a major commercial hub in Puntland face distinctive circumstances related to trade finance, diaspora remittances, and regional economic integration that shape both their debt capital structures and performance outcomes. Examining the effect of debt capital on financial performance specifically within Bosaso's commercial banks therefore provides valuable insights into how local financial institutions navigate Somalia's broader financial transformation while addressing region-specific opportunities and constraints.

Specific Objectives: To examine the effect of debt capital on financial performance of commercial banks in Bosaso Somalia
Hypothesis of Study HO: there is no statistically significant effect on the the effect of debt capital on financial performance of commercial banks in Bosaso Somalia

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Literature Review

Theoretical Review

This study is anchored on two foundational theories of capital structure: the Modigliani and Miller (1958) theorem and the Trade-Off Theory, which collectively provide complementary lenses for examining the relationship between debt capital and financial performance in commercial banking. The Modigliani and Miller (M&M) theorem, introduced by Franco Modigliani and Merton Miller in 1958, serves as the intellectual point of departure for modern capital structure analysis, positing that in perfect capital markets devoid of taxes, bankruptcy costs, and information asymmetries, the value of a firm is independent of its financing decisions (Modigliani & Miller, 1958). Under this irrelevance proposition, the mix of debt and equity becomes inconsequential because any benefit derived from lower-cost debt is precisely offset by the increased cost of equity resulting from heightened financial risk borne by shareholders (Finance Train, 2011). While the theorem's assumptions appear unrealistic when applied to actual banking environments particularly in fragile economies like Somalia its enduring contribution lies in establishing the benchmark against which market imperfections can be systematically evaluated. The theorem's recognition that debt creates a tax shield through interest deductibility, incorporated into later refinements of the theory, provides critical insights for understanding why commercial banks in jurisdictions with varying tax regimes might pursue different leverage strategies (eCapital, 2024). Recent empirical work examining French banks provides evidence supporting the M&M proposition, demonstrating that increases in capital ratios reduce systematic risk and subsequently decrease shareholders' required return on equity, thereby confirming the theorem's core insight regarding the relationship between capital structure and the cost of capital (Autorité de contrôle prudentiel et de résolution, 2025). Furthermore, contemporary theoretical extensions continue to validate the M&M framework, with general equilibrium models incorporating socially responsible investing demonstrating that under conditions of market completeness, the irrelevance proposition holds even when bond issuance is chosen endogenously (Alex, 2025).

The Trade-Off Theory emerges as a natural progression from the M&M theorem, directly addressing the real-world market imperfections that the original model abstracted away, and provides the primary analytical framework for this investigation of Bosaso's commercial banks. The Trade-Off Theory posits that firms establish optimal capital structures by balancing the marginal benefits of debt financing principally the tax deductibility of interest payments against the marginal costs of potential financial distress, including bankruptcy expenses, agency conflicts, and operational disruptions (eCapital, 2024). This theoretical perspective suggests that commercial banks will incrementally increase their leverage until the present value of tax savings from additional debt is exactly offset by the increased present value of expected bankruptcy costs, thereby identifying a theoretically optimal debt ratio that maximizes firm value. The theory's applicability to banking institutions assumes particular significance given the unique characteristics of the sector, including regulatory capital requirements, deposit insurance mechanisms, and the central role of debt (customer deposits) as the primary input for lending activities (Kwan, 2009). Recent research on tradeoff transparency has demonstrated that when firms clearly communicate the tradeoffs inherent in their financing decisions, stakeholders demonstrate greater compatibility and acceptance of resulting outcomes (Buell, Choi, & Soo, 2025). Empirical research examining firms operating in frontier bank-based economies those sharing structural similarities with Somalia's developing financial system has found evidence supporting the Trade-Off Theory's predictions, documenting positive debt-to-performance relationships that contrast with patterns observed in developed economies where excessive leverage may exacerbate agency problems (Khan & Ahmed, 2019). This finding carries substantial implications for understanding how commercial banks in Bosaso might optimally structure their debt capital to enhance financial performance, suggesting that in less mature financial systems with restricted access to equity markets, debt financing may confer net benefits when maintained within prudent limits.

The complementary nature of these two theoretical frameworks provides a robust analytical foundation for examining debt capital dynamics in Somalia's commercial banking sector. While the

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M&M theorem establishes the critical insight that financing decisions matter primarily because of market imperfections taxes, information asymmetries, bankruptcy costs, and regulatory constraints the Trade-Off Theory offers a practical framework for understanding how banks navigate these imperfections to arrive at financing decisions that balance competing considerations (Finance Train, 2011). For commercial banks operating in Bosaso, the Trade-Off Theory's emphasis on the trade-off between debt benefits and distress costs resonates strongly with the sector's operating realities, where limited deposit insurance, dollarization pressures, and concentrated lending portfolios heighten the consequences of financial distress. The absence of formal deposit protection mechanisms in Somalia, as documented in the Central Bank of Somalia's recent establishment of the Financial Stability Committee to strengthen systemic risk governance, means that depositor confidence and therefore debt capital stability depends critically on perceived bank soundness (Central Bank of Somalia, 2025). This institutional context makes the Trade-Off Theory's predictions about optimal leverage particularly salient. Moreover, recent empirical investigations of bank-level risk-return trade-offs in emerging markets have demonstrated that the relationship between risk-taking and profitability varies significantly across regulatory regimes and market structures, with evidence suggesting that the traditional risk-return trade-off may not always hold when examined through regulatory risk measures (Jankulár, 2024). This nuanced understanding reinforces the importance of contextualizing theoretical predictions within the specific institutional environment of Bosaso's commercial banks, where Islamic banking principles, trade finance specialization, and diaspora remittance flows which recent analysis indicates contribute approximately 13.6 percent of Somalia's GDP (The EastAfrican, 2024) create distinctive patterns of debt capital mobilization and utilization that may moderate or amplify the relationships predicted by conventional capital structure theories.

Methodology

Research design constitutes the systematic framework of methods and procedures employed in collecting and analyzing measures of the variables specified in the research problem (Kumar, 2019). This study adopted a cross-sectional survey research design, which involves the analysis of characteristics of a particular group at a single point in time. The cross-sectional, survey-based, descriptive, and correlational design was deemed appropriate for determining the effect of debt capital on financial performance among commercial banks in Bosaso, Somalia. According to Bhattacherjee (2012), cross-sectional surveys possess the distinct advantage of measuring a wide variety of unobservable phenomena, including participants' preferences, perceptions, and attitudes, while remaining ideal for collecting data from large populations that are not easily accessible through direct observation. This design further facilitates the use of questionnaires, which are typically preferred by respondents due to their non-intrusive nature and the flexibility they afford participants to complete them at their convenience, ultimately enabling robust regression analysis to determine the causal relationships between capital structure variables and financial performance outcomes. The cross-sectional approach was particularly suitable for this study given the operational realities of Somalia's banking sector, where longitudinal data collection presents significant challenges due to institutional instability and limited historical financial record-keeping (Central Bank of Somalia, 2025).

Population, in research methodology, refers to the totality of persons, objects, or elements that possess the specific characteristics about which a study is concerned (Ledford & Gast, 2018). It encompasses all individuals, elements, or units that meet the predetermined selection criteria for the population to be investigated for the purpose of the research. This study was conducted across three commercial banks operating in Bosaso: International Bank of Somalia, Premier Bank, and Salaam Bank. The target population comprised 247 employees of these banking institutions, specifically including administrative employees and operational staff who possess the relevant knowledge and experience necessary to provide meaningful insights into the relationship between debt capital and financial performance. The selection of administrative and operational staff was deliberate, as these categories of employees are directly involved in deposit mobilization, lending operations, and financial management decisions that shape the debt capital structure of their

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respective institutions. This population was deemed to possess the requisite information for the study, with administrative staff holding particular relevance due to their strategic oversight of banking operations and financial decision-making processes.

A sample constitutes the collection of some subset of elements drawn from a population, selected to represent the broader characteristics of that population (Denscombe, 2000). The sample size refers to the number of items or individuals to be selected from the universe to constitute a representative sample. For this study, the sample was determined using the Slovene formula, which provides a statistically rigorous approach to sample size calculation. The study sample was determined by applying the Slovene (1960) formula, considering a confidence level of 95 percent and a margin of error of 0.05. Slovene's formula is expressed as:

$n = N / [1 + N(e)^2]$

Where:

n = Number of samples
N = Total population
e = Error tolerance (0.05)
Applying this formula to the study population:

$n = 247 / [1 + 247(0.05)^2]$
$n = 247 / [1 + 247(0.0025)]$
$n = 247 / [1 + 0.6175]$
$n = 247 / 1.6175$
n = 152 respondents

A sample size of 152 respondents was therefore employed as the representative sample for this study.

Table 1: Population, Sample Size and Sampling Techniques

Category	Population	Sample	Sampling Strategy
International Bank of Somalia			
Administrative Employees	3	3	Census
Auditors	10	6	Simple Random
Accounts & Finance	31	19	Simple Random
Operations	51	31	Simple Random
Premier Bank			
Administrative Employees	3	3	Census
Auditors	12	6	Simple Random
Accounts & Finance	25	14	Simple Random
Operations	39	24	Simple Random
Salaam Bank			
Administrative Employees	3	3	Census
Auditors	9	6	Simple Random
Accounts & Finance	27	16	Simple Random
Operations	34	21	Simple Random
Total	**247**	**152**	

Source: International Bank of Somalia, Premier Bank, and Salaam Bank (2024) for total population; sample determined based on Slovene's formula (1960); sampling techniques determined by the researcher (2025).

Validity refers to the subjective judgment that an instrument measures what it intends to measure in terms of relevance and accuracy. It represents the measure employed to ascertain the correctness and appropriateness of research questionnaires in capturing the intended constructs (Wiek & Lang, 2016). In developing data collection instruments, it is essential to eliminate ambiguities by employing appropriate words and concepts to enhance clarity and ensure general suitability for the research context. For this study, the instruments were submitted to the research supervisor and two additional experts in the fields of finance and research methodology to ensure the validity of the measuring instruments and to determine whether the instruments were considered valid on face

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value. For questionnaire-based research, further validity was established using the Content Validity Index (CVI), which was calculated based on expert assessments of item relevance.
The Content Validity Index was computed using the formula:
CVI = n / N
Where:
n = Number of items declared relevant by experts
N = Total number of items in the instrument

According to Amin (2005), an instrument is considered valid based on systematic assessment by subject matter experts, with established thresholds for acceptable validity.

Table 2: Determination of the Validity of the Instrument

	Relevant Items	Not Relevant	Total
Expert 1	22	4	26
Expert 2	23	3	26
Expert 3	21	5	26
Total	**66**	**12**	**78**

CVI = 66 / 78 = 0.846

The computed CVI of 0.846 indicates that the instruments were considered valid, as this exceeds the established threshold. This finding aligns with Amin (2005), who noted that the overall CVI for an instrument is calculated by computing the average of expert assessments, and for an instrument to be accepted as valid, the average index should be 0.70 or above. The obtained value of 0.846 therefore demonstrates strong content validity, confirming that the questionnaire items appropriately represent the constructs of debt capital and financial performance as conceptualized in this study.

Results

Response Rate

Table 3: response rate

Response	Frequency	Response & Percentage (%)
Questionnaires	143	141 (98.6%)
Interview	09	8 (88.8%)
Total	**152**	**100.0**

Source: Primary Data, 2025

The study achieved a commendable response rate, which was analyzed based on the distribution of questionnaires and the conduct of interviews across the three commercial banks in Bosaso. A total of 152 respondents were targeted as the sample size, comprising 143 questionnaires and 9 scheduled interviews. Out of the 143 questionnaires distributed, 141 were successfully completed and returned, representing a questionnaire response rate of 98.6 percent. This exceptionally high rate of questionnaire return was attributed to the effective follow-up procedures employed by the researcher and the cooperative nature of the administrative and operational staff at International Bank of Somalia, Premier Bank, and Salaam Bank. Additionally, of the 9 interviews scheduled with key informants drawn from the administrative and audit categories, 8 were successfully conducted, yielding an interview response rate of 88.8 percent. The overall combined response rate for the study stood at 100 percent of the targeted sample, with 149 out of 152 respondents successfully participating across both data collection methods. This response rate far exceeds the minimum

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threshold of 70 percent recommended in social science research (Amin, 2005) and significantly surpasses the 50 percent response rate that Mugenda and Mugenda (2012) considered adequate for analysis and reporting. The high response rate obtained in this study substantially minimized the risk of non-response bias and enhanced the statistical power of subsequent analyses examining the relationships between debt capital variables and financial performance indicators as conceptualized within the Modigliani and Miller (1958) theorem and the Trade-Off Theory. Furthermore, the near-complete participation of the sampled respondents reflected the relevance of the research topic to the operational realities facing commercial banks in Bosaso, where concerns regarding capital structure optimization and financial sustainability have become increasingly salient following the Central Bank of Somalia's recent regulatory initiatives (Central Bank of Somalia, 2025). The successful engagement with respondents across both quantitative and qualitative methods provided a robust empirical foundation for testing the study's hypotheses regarding the effects of customer deposits, borrowed funds, debt capital composition, and capital utilization efficiency on the financial performance of commercial banks operating in this unique post-conflict banking environment.

Demographic characteristics of respondents

The study explored the profile information of respondents in terms of gender, age, level of education, and years of work experience in the organization. Understanding these demographic characteristics was essential for establishing the credibility and reliability of the information provided, as respondents' background characteristics directly influence their comprehension of the research variables and the quality of responses obtained. The demographic analysis provided the contextual foundation for interpreting subsequent findings related to the effect of debt capital on financial performance as conceptualized within the Modigliani and Miller (1958) theorem and the Trade-Off Theory.

Table 4: Demographic characteristics of respondents

Demographic Variable	Category	Frequency	Percent
Gender	Male	96	68.1
	Female	45	31.9
	Total	**141**	**100**
Education Level	Certificate	4	2.8
	Diploma	6	4.3
	Degree	94	66.7
	Post Graduate	33	23.4
	Others	4	2.8
	Total	**141**	**100**
Age Category	18-27 years	22	15.6
	28-37 years	44	31.2
	38-47 years	57	40.4
	48 years and above	18	12.8
	Total	**141**	**100**
Working Experience	Less than 3 years	13	9.2
	3-6 years	55	39
	Above 7 years	73	51.8
	Total	**141**	**100**

Source: Primary Data, 2025

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The results presented in Table 4, revealed that the majority of respondents were male, comprising 96 individuals representing 68.1 percent of the study sample, while female respondents numbered 45, accounting for 31.9 percent of the total. The study sought to attain responses from participants across gender identities, and the results demonstrated that although both genders were employed within the commercial banks operating in Bosaso, Somalia, male representation was substantially higher than female representation. This finding implied that the results were attained from both genders, confirming that the banks under investigation have employed both males and females in their operations. The gender distribution further indicated that the study benefited from perspectives provided by both male and female respondents regarding capital structure and financial performance. The predominance of male respondents reflected the broader employment patterns within Somalia's banking sector, where cultural factors and historical employment practices have traditionally favored male participation in formal financial institutions. The gender composition of the sample was considered adequate for providing balanced insights into the research questions, as both genders contributed to the understanding of how debt capital influences financial performance within the theoretical frameworks of Modigliani and Miller (1958) and the Trade-Off Theory.

The results presented in Table 4, on the educational qualifications of respondents indicated that the majority were degree holders, with 94 respondents representing 66.7 percent of the sample. Post graduate holders constituted 33 respondents (23.4 percent), while diploma holders numbered 6 respondents (4.3 percent). Certificate holders and those with other qualifications each accounted for 4 respondents, representing 2.8 percent respectively. The findings demonstrated that the respondents were universally educated, with the overwhelming majority possessing university-level qualifications. This educational profile ensured that information was attained from highly informed individuals who possessed the cognitive capacity to understand and respond meaningfully to questions regarding debt capital and financial performance. The results aligned with Nalusiba (2019), who argued that educational qualifications matter significantly when research is undertaken, as they inform the reasonableness of the study and provide guidance toward the realization of research goals and objectives. The researcher contended that employees of the study banks in Bosaso, Somalia were well educated, which enhanced the reliability of responses concerning complex financial concepts embedded in the Modigliani and Miller (1958) theorem, particularly regarding the relationship between capital structure and firm value, and the Trade-Off Theory's predictions about optimal leverage levels balancing tax benefits against bankruptcy costs.

The results presented in Table 4, on the age categories of respondents revealed that the majority fell within the 38-47 years age bracket, comprising 57 respondents representing 40.4 percent of the sample. Those aged 28-37 years numbered 44 respondents (31.2 percent), followed by respondents aged 18-27 years who totaled 22 (15.6 percent), and finally those aged 48 years and above who accounted for 18 respondents (12.8 percent). The findings confirmed that information was attained from respondents across mature age categories, with the majority possessing sufficient life and professional experience to provide meaningful insights into banking operations and financial decision-making. The predominance of respondents in the 38-47 years category suggested that the study captured perspectives from individuals in their prime working years, who typically combine youthful energy with accumulated professional wisdom. These findings aligned with Menja (2019), who contended that considering the age factor is significant in validating research findings, as mature respondents tend to provide more considered and reliable responses. The researcher contended that the majority respondents were mature, and therefore the information solicited from

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them was reliable for decision-making purposes related to understanding how debt capital affects financial performance through mechanisms predicted by capital structure theories.

The results presented in Table 4, on working experience indicated that the majority of respondents possessed substantial professional experience, with 73 respondents (51.8 percent) having worked for more than seven years in their respective banks. Those with 3-6 years of experience numbered 55 respondents (39.0 percent), while respondents with less than three years of experience accounted for only 13 individuals (9.2 percent). The findings demonstrated that the respondents had accumulated considerable working experience within the banking sector, with the majority having spent over seven years in their positions, thereby acquiring deep institutional knowledge and practical understanding of banking operations. This extensive experience indicated that respondents possessed sufficient information regarding capital structure decisions, deposit mobilization strategies, and financial performance outcomes to provide meaningful responses to the research questions. The findings agreed with Njogu and Omagwa (2018), who argued that work experience is an indication of respondents' information suitability in undertaking research of any nature, as experienced employees possess practical insights that complement theoretical understanding. The researcher argued in agreement that working experience indicated a rich informative environment from which to solicit information for the study, particularly regarding the application of the Trade-Off Theory in real-world banking contexts where decisions about debt capital composition involve balancing multiple competing considerations including regulatory requirements, depositor confidence, and profitability objectives as observed in Somalia's unique post-conflict financial landscape.

Descriptive Statistical Analysis of Debt Capital of Commercial Banks in Bosaso, Somalia

This section presents the descriptive statistical analysis of debt capital among commercial banks operating in Bosaso, Somalia. The analysis examined respondents' perceptions regarding various aspects of debt capital, including short-term capital generation through creditors, bank policies on short-term debt deployment, access to central bank lending, long-term loan generation based on collateral security, timeliness of long-term debt acquisition, and payment execution for long-term loans. The findings were interpreted using a mean range scale where 4.22-5.00 indicated very high/very strong agreement, 3.42-4.22 indicated high/strong agreement, 2.62-3.41 indicated moderate/average agreement, 1.81-2.61 indicated low/weak agreement, and 1.00-1.80 indicated very low/very weak agreement. These descriptive results provide empirical insights into how debt capital is structured and managed in Somalia's commercial banking sector, viewed through the theoretical lenses of the Modigliani and Miller (1958) theorem and the Trade-Off Theory.

Table 5: Descriptive Statistical Analysis of Debt Capital of Commercial Banks in Bosaso, Somalia

Item Code	Statement	Mean	Std. Deviation	Interpretation
DC1	*"The bank generates short term capital through creditors"*	3.28	1.6	Moderate
DC2	*"The bank policy on short term debt is appropriately deployed"*	3.21	1.56	Moderate
DC3	*"The bank can easily access short term loan from the central bank of Somalia"*	3	1.56	Moderate

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DC4	*"Bank long term loans are generated because of the bank high collateral security of the banks"*	3.51	1.46	High
DC5	*"The bank's long term debt acquisition is done so timely"*	3.79	1.25	High
DC6	*"The bank always execute the payment of long term loans timely"*	3.39	1.54	Moderate
Average Mean Debt Capital		**3.36**	**0.64**	**Moderate**

Source: Primary Data, 2025

DC1: "The bank generates short term capital through creditors" The findings presented in Table 6 for item DC1 revealed that respondents moderately agreed with the statement that their banks generate short-term capital through creditors, with a mean score of 3.28 and a standard deviation of 1.60. This moderate level of agreement suggested that while commercial banks in Bosaso do utilize creditor financing as a source of short-term capital, this practice is not universally established across all institutions or is employed with varying degrees of intensity. The relatively high standard deviation of 1.60 indicated considerable dispersion in respondents' perceptions, reflecting potential differences in banking practices across the three institutions studied. From the perspective of the Modigliani and Miller (1958) theorem, the use of short-term creditor financing represents a departure from perfect market assumptions, as creditors in Somalia's post-conflict banking environment face significant information asymmetries and heightened credit risks that influence the cost and availability of such capital. The Trade-Off Theory provided additional explanatory power, suggesting that banks must balance the benefits of short-term creditor financing against the costs of potential liquidity constraints and refinancing risks. The moderate mean score implied that Bosaso's commercial banks have not fully optimized their short-term debt structures according to the theoretical predictions, likely due to structural constraints including limited creditor confidence, underdeveloped interbank markets, and the absence of formal credit assessment mechanisms.

DC2: "The bank policy on short term debt is appropriately deployed" The results for item DC2 demonstrated that respondents moderately agreed that their banks' policies on short-term debt are appropriately deployed, with a mean score of 3.21 and a standard deviation of 1.56. This moderate perception indicated that while bank policies governing short-term debt exist and are implemented, there remains room for improvement in their design and execution. The standard deviation of 1.56 suggested notable variation in how respondents across different banks and hierarchical levels perceived the appropriateness of short-term debt policies. This finding aligned with the Trade-Off Theory's emphasis on optimal capital structure decisions, as the theory predicts that firms will adjust their leverage policies to balance the marginal benefits and costs of debt financing (eCapital, 2024).

However, the moderate mean score suggested that banks in Bosaso may not have achieved the theoretically optimal policy configuration, potentially due to environmental constraints including regulatory uncertainty, limited policy transmission mechanisms from the Central Bank of Somalia, and the challenges of operating in a dollarized economy with shallow financial markets (ODI, 2025). The findings also reflected the Modigliani and Miller (1958) insight that in imperfect markets, financing policies matter because they interact with taxes, bankruptcy costs, and information asymmetries—all of which are pronounced in the Somali context where the Central Bank of Somalia

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(2025) has only recently established formal oversight mechanisms through the Financial Stability Committee.

DC3: "The bank can easily access short term loan from the central bank of Somalia" The analysis of item DC3 revealed that respondents moderately agreed with the statement regarding easy access to short-term loans from the Central Bank of Somalia, with a mean score of 3.00 and a standard deviation of 1.56. This mean score, being the lowest among all debt capital items, indicated that commercial banks in Bosaso face moderate challenges in accessing central bank liquidity facilities. The standard deviation of 1.56 reflected diverse experiences across banks, with some institutions potentially enjoying better access to central bank lending than others. This finding carried significant theoretical implications when viewed through the lens of the Modigliani and Miller (1958) framework, as central bank access represents a critical mechanism for managing liquidity shocks and maintaining financial stability in imperfect markets. The Trade-Off Theory similarly emphasizes that access to lender of last resort facilities influences optimal leverage decisions by reducing the expected costs of financial distress. The moderate mean score of 3.00 suggested that the Central Bank of Somalia's capacity to provide short-term liquidity support remains developing, consistent with the institution's recent establishment of the Financial Stability Committee in November 2025 to strengthen systemic risk governance (Central Bank of Somalia, 2025). This finding also reflected the broader structural challenges facing Somalia's banking sector, including persistent dollarization, limited monetary policy transmission, and the absence of well-developed interbank markets that typically facilitate liquidity distribution among commercial banks (ODI, 2025).

DC4: "Bank long term loans are generated because of the bank high collateral security of the banks" The results for item DC4 indicated that respondents highly agreed that long-term loans are generated because of their banks' high collateral security, with a mean score of 3.51 and a standard deviation of 1.46. This high level of agreement demonstrated that collateral plays a crucial role in facilitating long-term lending in Bosaso's commercial banks, reflecting the importance of asset-based security in mitigating credit risk within Somalia's uncertain operating environment. The standard deviation of 1.46, while still substantial, was lower than for previous items, suggesting relatively greater consensus among respondents regarding the importance of collateral in long-term loan generation. This finding strongly aligned with the Trade-Off Theory's predictions regarding the role of tangible assets in supporting higher leverage, as collateral reduces lenders' exposure to default risk and thereby expands debt capacity (Khan & Ahmed, 2019). From the Modigliani and Miller (1958) perspective, collateral serves as a mechanism for reducing information asymmetries between borrowers and lenders, addressing one of the key market imperfections that cause capital structure to matter in real-world settings. The high mean score of 3.51 also reflected the practical realities of banking in Somalia, where formal credit assessment infrastructure remains underdeveloped, making collateral-based lending a primary mechanism for managing the elevated credit risks characteristic of post-conflict financial environments (World Bank, 2024).

DC5: "The bank's long term debt acquisition is done so timely" The findings for item DC5 revealed that respondents highly agreed that their banks' long-term debt acquisition is conducted in a timely manner, with a mean score of 3.79 and a standard deviation of 1.25. This represented the highest mean score among all debt capital items, indicating strong positive perceptions regarding the efficiency of long-term debt procurement processes in Bosaso's commercial banks. The standard deviation of 1.25, being the lowest among all items, suggested relatively consistent views across respondents and banks regarding the timeliness of long-term debt acquisition. This finding was particularly significant from a theoretical standpoint, as the Trade-Off Theory emphasizes that firms

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must be able to adjust their capital structures in response to changing market conditions and investment opportunities (eCapital, 2024). The high mean score of 3.79 suggested that commercial banks in Bosaso have developed effective mechanisms for accessing long-term financing when needed, potentially reflecting established relationships with correspondent banks, diaspora-linked funding sources, or international financial institutions. The Modigliani and Miller (1958) theorem, while assuming perfect market access, provides the counterfactual against which this finding gains significance in imperfect markets characterized by credit rationing and information asymmetries, timely access to long-term debt represents a valuable capability that enables banks to pursue profitable lending opportunities and maintain optimal capital structures.

DC6: "The bank always execute the payment of long term loans timely" The analysis of item DC6 demonstrated that respondents moderately agreed that their banks always execute timely payment of long-term loans, with a mean score of 3.39 and a standard deviation of 1.54. This moderate level of agreement suggested that while commercial banks in Bosaso generally maintain good repayment discipline, there may be occasional challenges or inconsistencies in loan repayment execution. The standard deviation of 1.54 indicated moderate variation in respondents' perceptions, possibly reflecting differences in payment performance across banks or across different types of long-term loan obligations. This finding carried important implications for both the Trade-Off Theory and the Modigliani and Miller (1958) framework. From the Trade-Off Theory perspective, timely loan repayment is essential for maintaining access to debt markets and avoiding the financial distress costs that offset the tax benefits of leverage. The moderate mean score of 3.39 suggested that banks are generally meeting their repayment obligations, thereby preserving their reputation and creditworthiness in what remains a relationship-based banking environment. The Modigliani and Miller (1958) theorem, while not directly addressing repayment behavior, implies that in perfect markets, all debts would be repaid according to contractual terms the moderate mean score in this study indicates that Somali banks are approaching but have not fully achieved this ideal, reflecting the ongoing challenges of operating in a post-conflict economy with limited institutional enforcement mechanisms (Central Bank of Somalia, 2025).

The average mean score for debt capital across all six items was 3.36 with a standard deviation of 0.64, indicating a moderate overall level of debt capital development and management among commercial banks in Bosaso, Somalia. This aggregate finding suggested that while banks have established basic debt capital structures and processes, significant opportunities exist for enhancement and optimization. The moderate overall rating aligned with the Trade-Off Theory's prediction that firms in developing financial markets may operate below their optimal leverage points due to supply-side constraints, underdeveloped institutional frameworks, and elevated bankruptcy costs (Khan & Ahmed, 2019). From the Modigliani and Miller (1958) perspective, the moderate mean score reflected the presence of multiple market imperfections information asymmetries, transaction costs, regulatory gaps, and limited access to formal liquidity facilities that cause capital structure decisions to have real effects on firm value in Somalia's banking sector. The variation in item-level findings was particularly instructive: items related to long-term debt acquisition (DC4 and DC5) received high ratings, suggesting that banks have developed effective mechanisms for securing and managing long-term financing, while items related to central bank access (DC3) and short-term debt policy deployment (DC2) received relatively lower ratings, indicating areas requiring policy attention and institutional development. These findings collectively suggested that commercial banks in Bosaso have adapted to their challenging operating environment by prioritizing long-term debt relationships and collateral-based lending, while

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continuing to face constraints in accessing central bank liquidity and optimizing short-term debt structures challenges that the Central Bank of Somalia's recent regulatory initiatives aim to address (Central Bank of Somalia, 2025; World Bank, 2024).
Interviews conducted with the bank managerial staff also attest to the quantitative results presented as;

> The bank policy on short term debt is appropriately deployed, the bank deploys short term debts in an appropriate manner based on well designed policies which are in adherence to the central bank lending regulations which have ably been followed and adhered too by the bank and regulating agencies in Somalia.

KII with Bank managerial Staff

> To generate the long term loans for this bank, collateral is ably available. Bank long term loans are generated because of the bank high collateral security of the banks. This has guaranteed the lenders to the provision of adequate and appropriate mechanisms of the banking system and performance functionality in access for the loans.

KII with Bank managerial Staff

> The bank activities have fully generated precedes for the provision of information necessary for the performance of the loan payments. The banks always execute the payment of long term loans timely manner in accordance to the bank system executions.

Descriptive Statistical Analysis of Financial Performance of Commercial Banks in Bosaso, Somalia
This section presents the descriptive statistical analysis of financial performance among commercial banks operating in Bosaso, Somalia. The analysis examined respondents' perceptions regarding various dimensions of financial performance, including profit attainment, revenue growth, customer base expansion, returns on capital, operational scheme development, new customer acquisition, cost reduction achievements, and overall performance improvement. The findings were interpreted using a mean range scale where 3.42-4.22 indicated good performance, 2.62-3.41 indicated fair performance, and lower ranges indicated progressively weaker performance. These descriptive results provide empirical insights into how financial performance is perceived and realized in Somalia's commercial banking sector, viewed through the theoretical lenses of the Modigliani and Miller (1958) theorem and the Trade-Off Theory, which posit that capital structure decisions including debt capital utilization directly influence firm value and financial outcomes.

Table 6: Descriptive Statistical Analysis of Financial Performance of Commercial Banks in Bosaso, Somalia

Item Code	Statement	Mean	Std. Deviation	Interpretation
FP1	"The bank attains profits every year"	3.02	1.67	Fair
FP2	"The bank's revenue from sales is generally increasing"	3.21	1.56	Fair
FP3	"The Bank's customer base has increased returns on capital over the last years"	3.04	1.56	Fair
FP4	"The bank's revenues are generally on the increase in the company"	3.37	1.54	Fair

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FP5	"The bank operation schemes have increased over the last years"	3.66	1.37	Good
FP6	"The bank attains new customers bases over time"	2.96	1.68	Fair
FP7	"The bank has attained financial performance through cost reduction"	3.02	1.63	Fair
FP8	"Banks financial performance has been gradually improving"	2.95	1.5	Fair
Average Mean		**3.15**	**0.68**	**Fair**

Source: Primary Data, 2025

FP1: "The bank attains profits every year" The findings presented in Table 6 for item FP1 revealed that respondents fairly agreed with the statement that their banks attain profits every year, with a mean score of 3.02 and a standard deviation of 1.67. This fair level of agreement suggested that while commercial banks in Bosaso generally achieve profitability, this outcome is not guaranteed or consistent across all institutions or fiscal periods. The relatively high standard deviation of 1.67, the second highest among all financial performance items, indicated considerable dispersion in respondents' perceptions, reflecting potential differences in profitability patterns across the three banks studied and possibly varying interpretations of what constitutes profit attainment in an Islamic banking context where interest-based transactions are prohibited. From the perspective of the Modigliani and Miller (1958) theorem, consistent profit attainment is essential for maximizing firm value and maintaining access to debt markets on favorable terms. The Trade-Off Theory provided additional explanatory insight, suggesting that banks must balance the benefits of debt financing against the costs of financial distress a balance that becomes particularly critical when profit streams are variable or uncertain. The fair mean score of 3.02 implied that Bosaso's commercial banks face challenges in achieving consistent profitability, likely due to structural constraints including limited lending opportunities, concentration risks in trade finance, and the high cost of operating in Somalia's post-conflict environment where the Central Bank of Somalia (2025) continues to develop regulatory frameworks to support financial sector stability.

FP2: "The bank's revenue from sales is generally increasing" The results for item FP2 demonstrated that respondents fairly agreed that their banks' revenue from sales is generally increasing, with a mean score of 3.21 and a standard deviation of 1.56. This fair perception indicated that while revenue growth is occurring, the pace and consistency of this growth may be moderate rather than robust. The standard deviation of 1.56 suggested notable variation in how respondents across different banks and functional areas perceived revenue trends. This finding aligned with the Trade-Off Theory's emphasis on the relationship between financing decisions and firm performance, as revenue growth provides the cash flows necessary to service debt and realize the benefits of leverage while avoiding distress costs (eCapital, 2024).

However, the fair mean score suggested that banks in Bosaso may not be achieving the revenue growth rates necessary to fully optimize their capital structures according to theoretical predictions. The findings also reflected the Modigliani and Miller (1958) insight that in imperfect markets, financing decisions interact with operating performance the moderate revenue growth observed may reflect the broader economic constraints facing Somalia, including dollarization, limited private sector credit absorption, and competition from mobile money platforms that have achieved 84 percent adult penetration (Ali, 2026), thereby constraining traditional banking revenue streams.

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FP3: "The Bank's customer base has increased returns on capital over the last years" The analysis of item FP3 revealed that respondents fairly agreed with the statement regarding customer base expansion leading to increased returns on capital, with a mean score of 3.04 and a standard deviation of 1.56. This fair mean score indicated that while banks are experiencing some improvement in returns on capital through customer acquisition, the magnitude of this effect is modest. The standard deviation of 1.56 reflected diverse experiences across banks, with some institutions potentially benefiting more from customer base expansion than others. This finding carried significant theoretical implications when viewed through the lens of the Modigliani and Miller (1958) framework, as returns on capital represent the fundamental metric of firm value creation that capital structure decisions ultimately influence. The Trade-Off Theory similarly emphasizes that optimal leverage should enhance returns on capital by providing tax-efficient funding for profitable investments. The fair mean score of 3.04 suggested that the relationship between customer base expansion and improved capital returns is present but not yet fully realized in Bosaso's banking sector. This finding reflected the structural reality that formal financial services penetration in Somalia remains below 9 percent of adults (Ali, 2026), indicating substantial untapped market potential that banks have not yet converted into enhanced returns on capital, possibly due to infrastructure constraints, limited product diversification, or competition from informal financial service providers.

FP4: "The bank's revenues are generally on the increase in the company" The results for item FP4 indicated that respondents fairly agreed that their banks' revenues are generally increasing, with a mean score of 3.37 and a standard deviation of 1.54. This represented the highest mean score among the fair-rated financial performance items, approaching the threshold for good performance (3.42). The standard deviation of 1.54 suggested moderate variation in revenue trend perceptions across respondents. This finding was particularly significant from a theoretical standpoint, as revenue growth provides the foundation for sustainable financial performance and determines the capacity to service debt obligations. The Trade-Off Theory predicts that firms with stronger revenue growth and more stable cash flows can support higher optimal leverage ratios because they face lower expected costs of financial distress (Khan & Ahmed, 2019). The relatively higher mean score of 3.37 suggested that commercial banks in Bosaso are experiencing positive revenue momentum, potentially reflecting the sector's recovery and expansion following Somalia's achievement of the Heavily Indebted Poor Countries completion point in December 2023 (World Bank, 2024). From the Modigliani and Miller (1958) perspective, positive revenue trends enhance firm value directly and also improve access to debt capital by signaling financial strength to creditors and depositors, thereby reducing the information asymmetries that characterize imperfect markets.

FP5: "The bank operation schemes have increased over the last years" The findings for item FP5 revealed that respondents agreed at a good level that their banks' operational schemes have increased over recent years, with a mean score of 3.66 and a standard deviation of 1.37. This represented the highest mean score among all financial performance items and was the only item rated as good rather than fair, indicating strong positive perceptions regarding operational expansion in Bosaso's commercial banks. The standard deviation of 1.37, being among the lowest in the financial performance section, suggested relatively consistent views across respondents and banks regarding the growth of operational schemes. This finding carried substantial theoretical significance, as operational expansion—including branch networks, product offerings, and service delivery channels—represents a tangible manifestation of financial performance and institutional development. The Trade-Off Theory suggests that firms with greater operational scale and

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diversification can support higher optimal leverage because their cash flows are more stable and their bankruptcy costs are lower relative to firm value. The good mean score of 3.66 indicated that commercial banks in Bosaso are actively investing in operational infrastructure, consistent with the sector's asset growth to US$2.0 billion in 2024 (Central Bank of Somalia, 2025). The Modigliani and Miller (1958) theorem, while focused on capital structure rather than operations, implies that operational investments that enhance profitability will increase firm value and improve the terms on which debt capital can be accessed, creating a virtuous cycle of growth and financial strengthening. FP6: "The bank attains new customers bases over time" The analysis of item FP6 demonstrated that respondents fairly agreed that their banks attain new customer bases over time, with a mean score of 2.96 and a standard deviation of 1.68. This represented the lowest mean score among all financial performance items, indicating relatively weaker performance in customer acquisition compared to other dimensions of financial performance.

The high standard deviation of 1.68, the highest among financial performance items, suggested considerable variation in customer acquisition success across banks and possibly across different time periods. This finding carried important implications for both the Trade-Off Theory and the Modigliani and Miller (1958) framework. From the Trade-Off Theory perspective, customer acquisition is essential for generating the revenue growth that supports higher optimal leverage and enables banks to realize the benefits of debt financing while managing distress costs. The relatively low mean score of 2.96 suggested that banks in Bosaso face significant challenges in expanding their customer base, reflecting the competitive pressures from mobile money platforms that dominate retail financial transactions and the limited formal financial inclusion that leaves over 69 percent of adults unbanked (Ali, 2026). The Modigliani and Miller (1958) theorem implies that in perfect markets, firms with superior customer acquisition capabilities would attract capital and grow the fair but relatively low mean score indicates that Somali banks are operating in highly imperfect markets where customer acquisition is constrained by structural factors beyond managerial control.

FP7: "The bank has attained financial performance through cost reduction" The results for item FP7 indicated that respondents fairly agreed that their banks have attained financial performance through cost reduction, with a mean score of 3.02 and a standard deviation of 1.63. This fair level of agreement suggested that cost management strategies contribute to financial performance in Bosaso's commercial banks, but the effectiveness of these strategies is moderate rather than exceptional. The standard deviation of 1.63 reflected notable variation in how respondents across different banks and functional areas perceived the contribution of cost reduction to overall financial performance. This finding aligned with the Trade-Off Theory's emphasis on the relationship between operational efficiency and optimal capital structure, as firms that effectively manage costs generate higher operating margins that enhance debt service capacity and reduce financial distress probability (eCapital, 2024). The fair mean score of 3.02 suggested that while cost reduction is recognized as a performance driver, banks may not have fully exploited this lever for improving financial outcomes. From the Modigliani and Miller (1958) perspective, cost efficiency directly impacts firm value and also influences capital structure decisions by affecting the stability and predictability of operating cash flows. The finding reflected the operational realities of banking in Somalia, where high security costs, infrastructure deficits, and the expenses associated with maintaining correspondent banking relationships in a challenging regulatory environment may limit the scope for cost reduction (ODI, 2025).

FP8: "Banks financial performance has been gradually improving" The analysis of item FP8 revealed that respondents fairly agreed that their banks' financial performance has been gradually improving,

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with a mean score of 2.95 and a standard deviation of 1.50. This represented the second lowest mean score among financial performance items, indicating relatively modest perceptions of performance improvement over time. The standard deviation of 1.50 suggested moderate variation in how respondents assessed the trajectory of financial performance improvement across banks. This finding carried significant theoretical implications when viewed through the lens of the Modigliani and Miller (1958) framework, as gradual performance improvement should theoretically enhance firm value and expand debt capacity over time. The Trade-Off Theory similarly predicts that firms demonstrating consistent performance improvement can support higher optimal leverage ratios as they build track records of financial stability and growth. The relatively low mean score of 2.95 suggested that while the Somali banking sector has achieved notable aggregate growth—with assets reaching US$2.0 billion and profitability improving to US$9.0 million in 2024 (Central Bank of Somalia, 2025) this growth may not be uniformly experienced or perceived across all institutions or by all employees. The finding also reflected the sector's ongoing challenges, including dollarization, limited credit markets, and the need to balance growth objectives with prudential considerations in a fragile operating environment.

The average mean score for financial performance across all eight items was 3.15 with a standard deviation of 0.68, indicating a fair overall level of financial performance among commercial banks in Bosaso, Somalia. This aggregate finding suggested that while banks have achieved positive financial outcomes, significant opportunities exist for performance enhancement and optimization. The fair overall rating aligned with the Trade-Off Theory's prediction that firms in developing financial markets may operate below their optimal performance potential due to structural constraints, underdeveloped institutional frameworks, and elevated operating costs (Khan & Ahmed, 2019). From the Modigliani and Miller (1958) perspective, the fair mean score reflected the presence of multiple market imperfections information asymmetries, limited access to capital, regulatory gaps, and competition from informal financial channels that prevent banks from achieving the performance levels predicted by perfect market models. The variation in item-level findings was particularly instructive: the item related to operational scheme expansion (FP5) received a good rating, suggesting that banks are successfully investing in infrastructure and service delivery capacity, while items related to customer acquisition (FP6) and gradual performance improvement (FP8) received relatively lower ratings, indicating areas requiring strategic attention. The fair overall mean score of 3.15, when compared to the moderate overall mean score for debt capital (3.36), suggested a positive but not yet fully optimized relationship between debt capital utilization and financial performance outcomes in Bosaso's commercial banks. These findings collectively indicated that while commercial banks in Bosaso have established operational foundations and are experiencing growth, they face ongoing challenges in translating debt capital into consistently improving financial performance a challenge that the Central Bank of Somalia's recent regulatory initiatives and the sector's continued development aim to address (Central Bank of Somalia, 2025; World Bank, 2024; ODI, 2025).

Qualitative data

KII with Bank managerial Staff

> The bank sales volumes have generally been incremental in the credit extension to the banks, the banks mandate of the execution of the duties are ably based on the cost reduction efforts in the banking system manner.

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Correlation analysis between debt capital and financial performance of commercial banks in Bosaso, Somalia

This section presents the correlation analysis specifically examining the relationship between debt capital and financial performance of commercial banks operating in Bosaso, Somalia. While the full correlation matrix included retained earnings and share capital as additional capital structure components, the primary focus of this study is on debt capital and its effect on financial performance. Pearson correlation coefficients were computed to determine the strength and direction of the linear relationship between these two key variables, with significance tested at the 0.01 level (2-tailed). The analysis draws upon responses from 141 bank employees across International Bank of Somalia, Premier Bank, and Salaam Bank in Bosaso, providing empirical evidence regarding the association between debt capital utilization and financial outcomes viewed through the theoretical lenses of the Modigliani and Miller (1958) theorem and the Trade-Off Theory.

Table 7: Correlation analysis between debt capital and financial performance of commercial banks in Bosaso, Somalia

Correlations	Debt Capital	Financial Performance
Debt Capital		
Pearson Correlation	1	.619**
Sig. (2-tailed)		0
N	141	141
Financial Performance		
Pearson Correlation	.619**	1
Sig. (2-tailed)	0	
N	141	141
**. Correlation is significant at the 0.01 level (2-tailed).		

Source: Primary Data, 2025

The correlation analysis revealed a strong positive and statistically significant relationship between debt capital and financial performance of commercial banks in Bosaso, Somalia, with a Pearson correlation coefficient of $r = 0.619^{**}$ and a significance value of $p = 0.000$, indicating that as debt capital utilization increases, financial performance improves correspondingly. The coefficient of determination ($r^2 = 0.383$) showed that debt capital explains 38.3 percent of the variation in financial performance among the banks studied. From the perspective of the Modigliani and Miller (1958) theorem, this finding reflected that in imperfect markets characterized by information asymmetries and transaction costs, debt capital does matter for firm value. The Trade-Off Theory provided stronger explanatory power, suggesting that commercial banks in Bosaso operate below their optimal leverage points such that increases in debt capital continue to yield positive performance gains through tax benefits, disciplined management, and signaling of creditworthiness (Khan & Ahmed, 2019; eCapital, 2024). The significant positive correlation also reflected the fundamental role of debt capital in banking operations, where customer deposits constitute the primary raw material for income-generating lending activities (Kwan, 2009). Based on this evidence, the null hypothesis (HO_1) which stated that customer deposits have no statistically significant effect on financial performance was rejected, and the alternative hypothesis was accepted, confirming that debt capital has a statistically significant positive effect on financial performance in Bosaso's commercial banks. This finding aligned with recent regulatory developments, including the Central Bank of Somalia's establishment of the Financial Stability Committee in November 2025, which has begun

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strengthening the institutional framework supporting debt capital mobilization (Central Bank of Somalia, 2025; World Bank, 2024).

Regression analysis on the effect of debt capital on financial performance of commercial banks in Bosaso, Somalia

This section presents the regression analysis examining the effect of debt capital on the financial performance of commercial banks operating in Bosaso, Somalia. Regression analysis was conducted to determine the causal relationship between debt capital (independent variable) and financial performance (dependent variable), building upon the correlation findings reported earlier. The analysis provides empirical evidence regarding the predictive power of debt capital in explaining variations in financial performance, viewed through the theoretical lenses of the Modigliani and Miller (1958) theorem and the Trade-Off Theory. The regression results include model summary statistics, analysis of variance (ANOVA), and regression coefficients, all derived from primary data collected from 141 respondents across International Bank of Somalia, Premier Bank, and Salaam Bank in Bosaso.

Table 8: Regression analysis on the effect of debt capital on financial performance of commercial banks in Bosaso, Somalia

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.619[a]	0.383	0.378	0.53901

a. Predictors: (Constant), Debt Capital

ANOVAa

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	25.042	1	25.042	86.193	.000[b]
	Residual	40.384	139	0.291		
	Total	65.426	140			

a. Dependent Variable: Financial Performance

b. Predictors: (Constant), Debt Capital

Coefficientsa

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	0.94	0.243		3.867	0
	Debt Capital	0.658	0.071	0.619	9.284	0

a. Dependent Variable: Financial Performance

Source: Primary data (2025)

The regression analysis revealed that debt capital had a statistically significant positive effect on the financial performance of commercial banks in Bosaso, Somalia. The model summary showed a correlation coefficient (R) of 0.619 and an R Square value of 0.383, indicating that debt capital explained 38.3 percent of the variance in financial performance among the banks studied. The ANOVA results confirmed the overall model significance with an F-statistic of 86.193 and p = 0.000, demonstrating that the regression model provided a significantly better fit than a model with no predictors. The coefficients analysis revealed an unstandardized coefficient (B) of 0.658 for debt

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capital, indicating that for every one-unit increase in debt capital utilization, financial performance increased by 0.658 units. The standardized coefficient (Beta) was 0.619 with a t-statistic of 9.284 (p = 0.000), confirming the strong and significant predictive power of debt capital. The resulting regression equation was Financial Performance = 0.940 + 0.658 (Debt Capital), providing a quantitative basis for understanding this relationship.

Based on this comprehensive statistical evidence, the null hypothesis (HO_1) which stated that customer deposits have no statistically significant effect on financial performance was rejected, and the alternative hypothesis was accepted, confirming that debt capital has a statistically significant positive effect on the financial performance of commercial banks in Bosaso, Somalia. These findings aligned with the Trade-Off Theory's prediction that debt financing generates net benefits that enhance firm performance, particularly in frontier financial markets where alternative financing sources remain constrained (Khan & Ahmed, 2019; eCapital, 2024). The results also reflected the Modigliani and Miller (1958) insight that in imperfect markets characterized by information asymmetries and transaction costs, capital structure decisions do affect firm value. The substantial explanatory power of debt capital (38.3 percent) underscored its strategic importance for banking sector development in Somalia, suggesting that strategies aimed at enhancing debt capital mobilization particularly customer deposits can yield significant improvements in financial performance within Bosaso's unique post-conflict banking environment, where recent regulatory initiatives by the Central Bank of Somalia have begun strengthening the institutional framework supporting debt capital utilization (Central Bank of Somalia, 2025; World Bank, 2024).

Discussions

The findings of this study revealed a statistically significant positive effect of debt capital on the financial performance of commercial banks in Bosaso, Somalia, leading to the rejection of the null hypothesis. The regression analysis demonstrated that debt capital explained 38.3 percent of the variance in financial performance ($R^2 = 0.383$), with a strong positive correlation ($r = 0.619$, $p = 0.000$) and a significant unstandardized coefficient ($B = 0.658$, $t = 9.284$, $p = 0.000$). These results provided compelling evidence that customer deposits, borrowed funds, and other debt instruments play a crucial role in enhancing the profitability and operational outcomes of commercial banks operating in Somalia's post-conflict environment. The rejection of the null hypothesis (HO_1) aligned with the Trade-Off Theory's prediction that debt financing generates net benefits that enhance firm performance up to an optimal leverage point, particularly in frontier financial markets where alternative financing sources remain constrained (eCapital, 2024; Khan & Ahmed, 2019). The findings also reflected the Modigliani and Miller (1958) insight that in imperfect markets characterized by information asymmetries, taxes, and transaction costs, capital structure decisions do affect firm value, contrary to the irrelevance proposition under perfect market assumptions.

The findings of this study were consistent with several recent empirical investigations examining the relationship between leverage and firm performance in various contexts. Rym (2025), in a study of SBF 120 index firms in France, found that leverage increased firm value due to market imperfections, supporting both the Trade-Off Theory's optimal leverage balance and the Pecking Order Theory's prediction that firms relying on internal financing enhance value by minimizing information costs. Similarly, research on bank ownership and monitoring in European firms demonstrated that financial institutions play a significant role in shaping capital structure decisions, with banks' monitoring activities influencing debt ratios and ultimately firm performance (Fernández-Méndez & González, 2019). The positive relationship between debt capital and financial performance observed in

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Bosaso's commercial banks also aligned with findings from frontier bank-based economies documented by Khan and Ahmed (2019), who reported positive debt-to-performance relationships in less mature financial systems, contrasting with patterns observed in developed economies where excessive leverage may exacerbate agency problems. Furthermore, the substantial explanatory power of debt capital (38.3 percent) was consistent with the Autorité de contrôle prudentiel et de résolution (2025) study on French banks, which provided evidence supporting the Modigliani-Miller theorem by demonstrating that increases in capital ratios reduce systematic risk and subsequently decrease shareholders' required return on equity. The findings also resonated with broader research on frontier economies, where Ibrahim (2025) noted that liquidity management and debt capital deployment remain critical challenges facing Somali banks amid ongoing regulatory reforms and dollarization pressures.

The validation of both the Trade-Off Theory and the Modigliani and Miller (1958) theorem within the context of Somalia's commercial banking sector represented a significant theoretical contribution. The Trade-Off Theory was validated through the positive relationship between debt capital and financial performance, suggesting that commercial banks in Bosaso operate below their optimal leverage points such that marginal increases in debt capital continue to yield positive marginal returns to performance. This finding aligned with the theory's prediction that firms balance the marginal benefits of debt financing against the marginal costs of potential financial distress to determine an optimal capital structure that maximizes firm value (eCapital, 2024). The Modigliani and Miller (1958) theorem was validated through the recognition that market imperfections including information asymmetries, regulatory gaps, limited access to central bank liquidity, and the absence of deposit protection mechanisms cause capital structure decisions to have real effects on firm value in Somalia's banking sector. The Central Bank of Somalia's establishment of the Financial Stability Committee in November 2025, which marked a historic step toward strengthening systemic risk governance, reflected the growing institutional recognition that prudent capital management directly influences banking sector stability (Central Bank of Somalia, 2025; Somalia Today, 2025). The findings also resonated with recent theoretical work by Vieira (2025), who challenged conventional financial economics assumptions and emphasized the need to understand capital structure dynamics within their specific institutional and societal contexts. The validation of these theories in Somalia's unique post-conflict environment demonstrated their robustness and applicability across diverse economic contexts, while also highlighting the importance of contextualizing theoretical predictions within specific institutional frameworks.

Conclusion

This study concluded that debt capital had a statistically significant positive effect on the financial performance of commercial banks in Bosaso, Somalia, leading to the rejection of the null hypothesis and the acceptance of the alternative hypothesis. The regression analysis demonstrated that debt capital explained 38.3 percent of the variance in financial performance, with a strong positive correlation ($r = 0.619$, $p = 0.000$) and a significant unstandardized coefficient ($B = 0.658$, $t = 9.284$, $p = 0.000$), indicating that for every one-unit increase in debt capital utilization, financial performance increased by 0.658 units. The descriptive analysis revealed that debt capital management was moderate overall (mean = 3.36), with banks demonstrating strength in long-term debt acquisition (mean = 3.79) and collateral-based lending (mean = 3.51), while facing challenges in accessing central bank liquidity (mean = 3.00). Financial performance was rated fair overall (mean = 3.15), with operational scheme expansion rated good (mean = 3.66) but customer acquisition (mean = 2.96) and gradual performance improvement (mean = 2.95) requiring strategic attention. These findings

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validated both the Trade-Off Theory and the Modigliani and Miller (1958) theorem within Somalia's unique post-conflict banking context, demonstrating that debt capital decisions significantly influence financial outcomes in environments characterized by market imperfections, limited institutional frameworks, and ongoing regulatory development.

Recommendations

Based on the findings of this study, the following recommendations were developed for key stakeholders in Somalia's banking sector:

1) For Bank Managers and Management Teams: Bank managers should prioritize strategies aimed at enhancing debt capital mobilization, particularly customer deposits, as the regression analysis demonstrated.
2) For the Central Bank of Somalia and Regulators: The Central Bank of Somalia should accelerate efforts to strengthen the institutional framework supporting debt capital mobilization and utilization, building on the recent establishment of the Financial Stability Committee.
3) For Policymakers and Government Institutions: Policymakers should address the structural constraints limiting financial sector development, including persistent dollarization, limited credit infrastructure, and governance gaps. The phased reintroduction of the Somali shilling under a currency board arrangement should proceed with careful planning and public education campaigns to build trust in the local currency.
4) For Development Partners and International Financial Institutions: Development partners should continue supporting Somalia's financial sector reforms, building on the World Bank's debt relief initiative that culminated in the Heavily Indebted Poor Countries completion point.

Contribution to Knowledge

This study made several significant contributions to the existing body of knowledge on capital structure and financial performance. Firstly, it extended the application of the Trade-Off Theory and the Modigliani and Miller (1958) theorem to the context of a post-conflict, frontier economy, demonstrating that these theoretical frameworks remain valid and relevant even in environments characterized by extreme institutional fragility, dollarization, and limited regulatory infrastructure. The study provided empirical evidence that debt capital significantly influences financial performance in Somalia's commercial banking sector, thereby contributing to the limited literature on capital structure dynamics in fragile and conflict-affected states. Secondly, the study offered granular insights into the specific mechanisms through which debt capital affects bank performance in an Islamic banking context, highlighting the importance of collateral-based lending, timely debt acquisition, and customer deposit mobilization. The findings regarding the varying levels of development across different debt capital components provided nuanced understanding of the specific areas requiring policy attention and institutional development. Thirdly, the study contributed methodologically by demonstrating the application of rigorous statistical techniques including correlation analysis, regression analysis, and hypothesis testing in a challenging research environment where data collection presents significant obstacles. The high response rate and strong content validity demonstrated that reliable empirical research can be conducted in post-conflict settings when appropriate methodologies are employed. Finally, the study provided a baseline for future research on Somalia's banking sector, establishing empirical benchmarks for debt capital utilization and financial performance against which future developments can be assessed as the sector continues to evolve under the Central Bank of Somalia's enhanced regulatory framework.

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Areas For Further Research

Based on the findings and limitations of this study, the following areas were identified for future research:

1) Longitudinal Studies on Debt Capital and Financial Performance: Future research should employ longitudinal designs to examine the effect of debt capital on financial performance over extended time periods, as the cross-sectional design of this study captured relationships at a single point in time. Longitudinal studies would enable researchers to assess how the relationship between debt capital and financial performance evolves as Somalia's banking sector matures and as regulatory reforms take effect.
2) Comparative Studies Across Somali Regions: Comparative research should be conducted across different regions of Somalia, including Mogadishu, Hargeisa, and Kismayo, to examine whether the relationship between debt capital and financial performance varies across regional contexts with different economic structures, security situations, and levels of banking sector development.
3) The Role of Islamic Banking Principles: Given that most Somali banks operate under Islamic banking principles, further research should examine how Shariah compliance requirements moderate the relationship between debt capital and financial performance, particularly regarding the treatment of interest, profit-sharing arrangements, and asset-backed financing structures.
4) Impact of Mobile Money and Digital Finance on Bank Performance: With a large proportion of adults using mobile money services, future research should investigate the competitive dynamics between traditional banks and mobile money platforms, examining how digital financial services affect banks' ability to mobilize deposits and generate income.
5) Deposit Insurance and Debt Capital Stability: Research should examine the potential impact of introducing deposit insurance mechanisms on debt capital stability and financial performance, providing evidence to inform the Central Bank of Somalia's policy decisions regarding depositor protection frameworks.
6) Bank-Specific Factors Moderating the Debt-Performance Relationship: Future studies should investigate how bank-specific characteristics including size, age, ownership structure, and risk management practices moderate the relationship between debt capital and financial performance in Somalia's commercial banks.

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