THE EFFECT OF LONG-TERM DEBT FINANCING ON PROFITABILITY OF COMMERCIAL AIRLINES IN KENYA

Patrick Malongo Lidovolo[1i],
Atieno Margaret[2]
[1]PhD Student,
Kaimosi Friends University,
Kenya
[2]Dr., Department of Accounting & Finance,
Kaimosi Friend University,
Kenya

Abstract:
The objective of this study was to assess the effect of long-term debt financing on the profitability of commercial airlines in Kenya. Pecking order theory directed the study. A cross-sectional research design was adopted in the study. The census sampling technique was. Secondary data was collected from audited financial statements. Panel data was analyzed using descriptive and inferential statistics. Descriptive statistics consisted of minimum values, maximum values, mean and standard deviation and inferential statistics consisted of correlational analysis, Hausman test for fixed and random effects and random effects models. Hausman test indicated that the random effect model was appropriate for the study. The study results showed that long-term debt financing has a negative and statistically significant effect on the profitability of commercial airlines in Kenya. This is supported by a regression coefficient of –0.2318 and a p-value of 0.038. The study recommends that executives of commercial airlines should aim to have a long-term debt that is manageable by the company and ensure that the long-term debt load is compatible with a favorable long-term debt ratio for the company to function without worrying about defaulting on loans.

JEL: R40; L20; G20

Keywords: long-term debt financing, profitability

1. Introduction

Today's corporate finance managers must simultaneously locate the best business financing solutions across global, regional, and local marketplaces while also dealing

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[i] Correspondence: email lidovolophd@gmail.com, omondimargy@gmail.com

with their companies' poor financial performance. The triple demands of making a profit for investors, keeping businesses running, and promoting economic expansion must also be managed by these executives. Determining an ideal capital structure is still a mystery, despite the fact that current theory shows that debt is one of the main sources of financing for a firm's long-term activities, which heavily influences its success. After equity, debt is the second most significant component of the capital structure. It involves issuing financial instruments like short-term debt, long-term debt, loans payable and notes to finance a company's operations and assets (Omollo & Muturi, 2018).

Debt financing is a key source of capital in many growing firms since their retained earnings may not be sufficient enough or may be unavailable. However, if firms settle on poor debt financing decisions, the outcome may lead to high capital costs leading to a reduction in overall financial performance. Therefore, in making this decision the management should focus on various sources of financing in relation to their cost and benefits associated. The management of a firm is usually faced with a balancing act of deciding how much funds should be raised by owners/shareholders (equity) and how much should be raised externally from non-owners (debt) (Mutegi, 2016).

The airline industry makes up over 3.6% of the global GDP, or 2.7 trillion dollars, outpacing several other economic sectors. The aviation industry experiences a variety of factors that have an impact on its financial growth, such as increased capital investment to improve the financial structure, changes in government taxes, and the ability to keep airlines at the top of the charts with aggressive marketing tactics to attract more travelers and problems in servicing long-term debts. As more people choose to travel by air, the amount of traffic has increased, forcing airlines and airports to clearly improve how they operate by leveraging new resources and allocating time and space more effectively (Kasomba & Omagwa, 2020). Airlines do experience difficulties maintaining as the long-term debt is affected by the change. The airline industry is crucial to Kenya's continued sustainable development. Improvements in transportation infrastructure would boost estate value by lowering transportation costs and promoting rapid economic growth and individual mobility. This region must be developed in order to promote the expansion of the transportation industry in addition to raising living standards (Mwangi, 2013).

A substantial loss was made by KQ in 2022. Currency losses as a result of the ongoing financial restructuring, an increase in fuel prices, and currency devaluations versus the dollar all had an effect on financial performance. Because of the growth in operations, KQ's direct operating costs rose by 93%. Compared to the deficit in 2021 of $120 million, the net loss increased by 1.4 times to $170 million. The carrier's total loss to date is $1.3 billion as a result. The rise in fuel prices around the world is to blame for the costs rising from $660 million to $1.2 billion. KQ had outstanding debts with local banks of Sh31.4 billion, Sh58.6 billion for the government, and Sh22.8 billion for unpaid suppliers. (Kenya Airways, 2022). Therefore, this study intended to evaluate the effect of long-term debt financing on the profitability of commercial airlines in Kenya.

2. Objective of the Study

The main objective of the study was to evaluate the effect of long-term debt financing on profitability of commercial airlines in Kenya.

2.1 Hypothesis of the Study

H_{01}: Long-term debt financing has no significant effect on the profitability of commercial airlines in Kenya.

3. Conceptual Framework

This section conceptualizes long-term debt management and profitability.

Independent Variable	Dependent Variable
Long-term Debt Financing • Long-term Debt Ratio	**Profitability** • Net Profit Margin
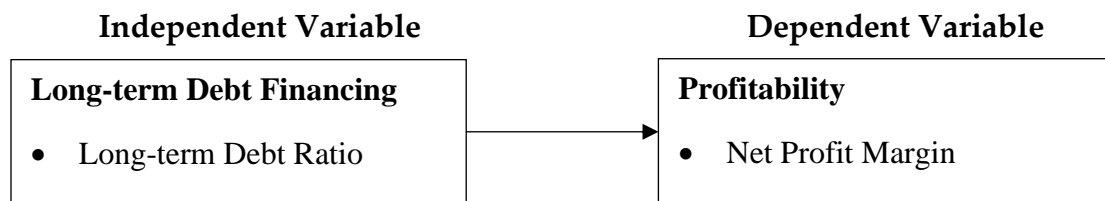
  The independent variable used in the study was long-term debt financing. Long-term debt financing was operationalized as a long-term debt ratio. The dependent variable was profitability which was measured in terms of net profit margin.

4. Literature Review

4.1 Theoretical Review

A review of significant theories regarding long-term debt financing is presented in this section.

4.2 Pecking Order Theory

This theory was proposed by Myers in 1984. According to the pecking-order theory, businesses prefer to fund their investments with retained earnings first because there is an information asymmetry. Firms issue loans first and equity later when internal finance is insufficient. According to the pecking order principle, businesses have a certain preference order for the capital utilized to finance their operations (Zender & Lemmon, 2010). The preference list is arranged according to how much each financing option will cost. It is preferred to use both internal and external financing, and for reinvestment and fundraising purposes, a small amount of external financing is obtained by issuing equity. According to the pecking order principle, high-growth businesses will have a debt ratio because they will choose debt over equity more often (Akinleye, 2019). This suggests that in the case of external investment, debt capital is preferred to issuing additional stock capital. The capital structure a company chooses has a significant impact on its profitability (Liziwe, 2017). The fundamental tenet of the pecking order theory is that

management and investor information asymmetry influences leverage decisions. Because investors will view equity (stock) issuances negatively, firms will prefer to finance capital through retained earnings, followed by debt, and only after these other options have been exhausted, new equity (Obuya, 2017). To determine whether the type of funding chosen by commercial airlines has an impact on the company's profitability, a thorough understanding of the pecking order theory was required.

4.3 Literature Review

This study reviews previous studies related to long-term debt financing and the profitability of commercial airlines in Kenya.

Meshack, Owa, Nwadialor, and Chiedu (2022) conducted a study to examine the relationship between long-term debt financing and the financial performance of listed manufacturing firms in Nigeria. This study used an ex-post facto research design. the sample used for the research included 75 non-financial firms listed on the Nigerian Exchange Group. the study's findings revealed that long-term debt financing has a significant positive impact on the financial performance of listed firms.

Bannerman and Fu (2019) conducted a study to assess how long-term debt affects a company's growth. With the aid of the data gathered, the study took into account the targeted population of different firm sizes as important determining criteria. A descriptive research design was adopted in the study. Both correlation and regression analysis were used to analyze the data. Although not statistically significant as initially believed, it has been found that long-term debt has a detrimental impact on business growth when size and maturity remain important considerations for accessing long-term financing.

Shikumo, Oluoch, and Wepukhulu (2020) evaluated how long-term debt affected the financial development of non-financial enterprises listed on the Nairobi Securities Exchange. The research design used was explanatory. 45 non-financial companies listed at the NSE for ten years, from 2008 to 2017, made up the study's population. Both panel data analysis and descriptive statistics analysis were used in the investigation. According to the findings, long-term debt accounts for respectively 21.6% and 5.16% of the variation in financial growth as assessed by increases in earnings per share and market capitalization. Long-term debt considerably and favorably affects financial growth as determined by increases in market capitalization and earnings per share.

Juniour, De-Servas, Rodríguez, and de-Sousa-Ribeiro (2017) aimed to investigate how long-term debt affected Brazilian and Latin American corporations' performance before, during, and after the 2008 global financial crisis. From 2007 to 2015, accounting data for public firms listed on the stock exchanges of Brazil, Chile, Argentina, Colombia, Mexico, and Peru were gathered. Using panel data and a multiple linear regression model, the study examined the relevant literature. Data analysis for the study was done using Stata software. The findings showed that there is a negative correlation between long-term debt and performance for Latin American businesses, with the exception of Brazilian ones.

3. Methodology

The research methods used in this study are outlined in this section.

3.1 Research Design

This study employed a cross-sectional research design. A variety of Kenyan commercial airlines were included in the study. The study's cross-sectional research design was acceptable since it gave a thorough and highly accurate picture of the financial position of Kenya's commercial airlines.

3.2 Target Population

The study's target demographic consisted of all commercial airlines in Kenya. The target population included Kenya Airways, Jambojet, African Express Airways, Airkenya Express, Fly540, East Africa Safari Air, Mombasa Air Safari and Safarilink Aviation.

Table 1: Target Population

Commercial Airlines
1. Kenya Airways
2. Jambojet
3. African Express Airways
4. Airkenya Express
5. Fly540
6. East Africa Safari Air
7. Mombasa Air Safari
8. Safarilink Aviation

3.3 Sampling Techniques

The census-sampling technique was used for this research. Thus, every commercial airline was used to establish the effect of long-term debt management on profitability. The technique was preferred in this study since it provides more accurate and exact information as no unit is left out hence objective results. Census is a collection of information on all units in the population. Census ensures accurate information is collected from the entire population (Cooper & Schindler, 2017).

3.4 Data Collection

Secondary data was obtained from the audited financial reports of Kenya's commercial airlines. The panel data consisted of the time series and cross-sections. The cross-sectional data entails the airlines, while the time series was the years between 2018-2022.

3.5 Data Processing, Analysis, and Presentation

The data collected was processed and cleaned using Microsoft Excel before exporting to STATA. Panel data was analyzed using descriptive and inferential statistics. Descriptive statistics comprised mean, minimum value, maximum value and standard deviation, and inferential statistics included panel linear regression, correlation analysis, and the

Hausman test for a fixed and random effect. The study employed a panel data regression analysis model. The Hausmann specification test established that random effect model was appropriate for the study. Findings were presented in tables, graphs, and figures. The effects of capital structure decisions and the profitability of retail outlets was modeled using the following regressions equations;

$$NPM_{it} = \beta_0 + \beta_1 LTDM_{it} + \varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(1)}$$

Where:
NPM_{it} – Represents net profit margin,
β_0 – Constant,
β_1 – Regression coefficients,
LTDF – Represents Long-term Debt Financing,
i – Denotes the observations (commercial airlines),
t – Represents the time dimensions from 2018 to 2022,
ε_{it} – The error terms.

4. Data Analysis, Results, and Discussions

The section contains findings and a discussion of the study results.

4.1 Descriptive Statistics
Descriptive statistics were conducted to understand the distribution of variables used. Table 2 presents descriptive statistics of the profitability and long-term debt financing of commercial airlines in Kenya.

Table 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
LTDF	40	.8259	.4411	.1842	2.9990
NPM	40	.2492	.1985	-.7057	.9524

Source: Research data.

The descriptive statistics results in Table 2. Show that in total, there were 40 observations which were from 8 commercial airlines over a period of five years (panel data). The mean for profitability measured using net profit margin was 0.2492 with a minimum of -0.7057 and a maximum of 0.9524. The maximum and minimum values of net profit margin over the study period were positive and negative. The positive values indicated that some of the commercial airlines under the study made a profit within the study period while the negative values made that some airlines made losses during the study period. The mean of 0.2492 for net profit margin, which was higher than the standard deviation value of 0.1985, indicated that profitability varied during the study period.

Long-term debt financing measured using the long-term debt ratio had a mean of 0.8259 with the lowest value of 0.1842, a maximum value of 2.999, and a standard deviation of 0.4411, implying that long-term debt varied during the study period. The

lowest value of 0.1842 showed that there was a commercial airline operating with very low long-term debts. The maximum value of 2.999 for long-term debts implies that this firm was operating on more debts than its total assets.

4.2 Correlation Analysis

The study conducted correlation analysis for the various variables to examine the nature of the statistical association between long-term debt financing and profitability. Table 3. shows the correlation matrix of long-term debt and profitability.

Table 3: Correlation Analysis

Variable	LTDF	NPM
LTDF	1.0000	
NPM	-0.3477*	1.0000
	0.0279	
*represents a 5% significant level.		

Source: Study data.

The correlation results in Table 3 established that long-term debts financing is negatively and significantly related to profitability. This is supported by an r of -0.3477 and a P-value of 0.0279. This meant that higher long-term debts result in reduced profitability of commercial airlines. These results agree with Bannerman and Fu, (2019) who found out that long-term debts have positive and negative associations with the financial performance of firms in China.

4.3 Hausman Test for Fixed and Random Effects

The study conducted the Hausman test to identify the most appropriate model for the research. The Hausman test results are presented in Table 4.

Table 4: Hausman Test Results for Random and Fixed Effects

	(b) Fixed	(B) Random	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
LTDF	-.1404	-.2318	.9133	.0725
b = consistent under Ho and Ha				
B = inconsistent under Ha, efficient under Ho				
chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)				
= 1.59				
Prob>chi2 = 0.2080				

Source: Stata Data.

Table 4 presents the Hausman test for fixed and random effects results. The Hausman test results show a P-value of 0.2080, indicating that the chi2 was statistically insignificant at a 5% significance level. As a result, the study failed to reject the null hypothesis and concluded that the random effect model was preferred to the fixed effect model. Therefore, the study used a random effect model to extract a regression equation.

4.4 Regression Coefficients Analysis

The study used a random effect model to establish the effect of long-term debt financing on the profitability of commercial airlines in Kenya. The regression results were discussed in line with the study objectives. The regression results are presented in Table 5.

Table 5: Random Effects Model

NPM	Coef.	Std. Err.	Z	P>|z|
LTDF	-.2318	.1119	-2.07	0.038
_cons	.4406	.1069	4.12	0.000
R-sq: corr (u_i, X) = 0 (assumed)				
within = 0.0345 Wald chi2(3) = 4.28				
between = 0.4429 Prob > F = 0.0385				
overall = 0.1209				

The random effects model results in Table 5 established that the overall model was statistically significant. This is supported by the reported Prob > chi2 of 0.0385 which is less than 0.05 level of significance. These findings also established that long-term debt financing is a good predictor of the profitability of commercial airlines in Kenya. This is supported by the overall R-squared of 0.1209. This meant that long-term debt financing explains 12.09% of the variation in the profitability of commercial airlines in Kenya, while other factors not considered in this study contribute 87.91% of the profitability. As per the results, the estimated model is shown below:

$$NPM_{it} = 0.4406 - 0.2318\ LTDM_{it}\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.(2)$$

From the regression model (2), the constant 0.4406 shows that if long-term debt financing, is not implemented, the profitability of commercial airlines measured on net profit margin would be 0.4406. The objective of the study was to establish the effect of long-term debts financing on the profitability of commercial airlines in Kenya. The null hypothesis of this objective was that long-term debts financing has no significant influence on the profitability of commercial airlines in Kenya. Table 5. shows that long-term debts have a negative and significant effect on the profitability of commercial airlines in Kenya. This is supported by regression coefficients of −0.2318 with P-values of 0.038<0.05 and Z-statistics -2.07 smaller than the Z-critical of -1.96, implying that long-term debts have a negative and significant effect on profitability, thus rejecting the null hypothesis.

These results meant that a unit increase in long-term debts would lead to a subsequent decrease in the profitability of commercial airlines by 0.2318 units. This implied that increased long-term debts would lead to decreased profitability of commercial airlines in Kenya. The results agree with Bannerman and Fu (2019) who found out that long-term debts have positive and negative effects on the financial performance of firms in China.

5. Summary, Conclusions, and Recommendations

5.1 Summary of the Study

The study intended to evaluate the effects of long-term debt financing on the profitability of commercial airlines in Kenya. The research was anchored on the pecking order theory. Study data was gathered from the audited financial statements of commercial airlines. The Pearson correlation results established that long-term debt financing and profitability are negatively and significantly associated. Regression results also established that long-term debt and profitability are negatively and significantly associated. This means that a unit increase in long-term debt would lead to a subsequent decrease in the profitability of commercial airlines.

5.2 Conclusions of the Study

From the inferential statistics of the study, it was found that long-term debt negatively correlates to commercial airlines' profitability. This is backed up by an r of -0.3477. The regression model found that long-term debts negatively and significantly affect the profitability of commercial airlines in Kenya. This is validated by a regression coefficient of 0.2318 and a probability value of 0.038. Therefore, the study concluded long-term debts negatively and significantly affect the profitability of commercial airlines in Kenya.

5.3 Recommendations of the Study

Higher long-term debt can make a company more vulnerable to business downturns and result in unpredictable earnings due to increasing interest costs. Therefore, executives of commercial airlines should aim to have a long-term debt that is manageable by the company and ensure that the long-term debt load is compatible with a favorable long-term debt ratio for the company to function without worrying about defaulting on loans. They should also develop diversifying strategies and policies to control long-term debt, thus improving the firm's profitability.

Conflict of Interest Statement

The authors declare no conflicts of interest.

About the Authors

Patrick Malongo Lidovolo is a student at Kaimosi Friends University studying a Doctorate in Business Management (Accounting Option).
Dr. Margaret Atieno is a Lecturer and Head of Accounting Department at Kaimosi Friends University with diverse research interests in the field of Accounting and Finance.

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