

LOCATED IN EAST WOLLEGA ZONE, OROMIA REGIONAL STATE, ETHIOPIA, ON
DETERMINANTS OF CAPITAL STRUCTURE OF SAVINGS AND CREDIT
COOPERATIVE UNIONS

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DOI: <https://doi.org/10.56293/IJMSSSR.2022.4601>

IJMSSSR 2023

VOLUME 5

ISSUE 3 MAY – JUNE

ISSN: 2582 - 0265

Abstract: The purpose of this study was to look into the particular factors that affect the capital structure of SACCUs operating in the East Wollega zone. This study used an explanatory and descriptive research design. A non-probability sampling design was used, and the "Agadhaga'ii" SACCU was purposefully chosen. The research unit's financial accounts were used to gather secondary data. For eleven years, from 2011 to 2012 to 2021 to 2022, multiple linear regression and correlation analysis were both used for a subset of SACCU. The Statistical Packages for the Social Sciences (SPSS) version 20 and STATA version 14.0 were used to examine the data. The results of this study demonstrate that the study unit heavily utilizes the pecking order theory and the static trade-off theory as two capital structure theories. In order to reduce the weighted average cost of capital while making financial decisions, the researcher advised the management bodies to focus their attention and efforts on the key factors determining the capital structure of the study unit.

Keywords: Capital Structure, Determinants, Multiple Linear Regression, Profitability, Savings and Credit Cooperative Union

Introduction

In the early part of the 20th century, mostly in Germany, the first Savings and Credit Cooperatives were established. The pioneers of the rural credit cooperative, who are regarded as the movement's founding fathers (Gweyi, M. O., &Karanja, J. (2014) According to the World Council of Cooperative Union's 2018 Statistical Report, there are more than 274 million members of over 85,400 Savings and Credit Cooperative Unions across 118 countries, and their total assets total over \$2,191,086,346,006. This illustrates how Savings and Credit Cooperative Union operates within a variety of economic, historical, and cultural situations (WOCCU, 2018).

A company's capital structure is made up of various forms of equity and debt capital as a result of its financing decisions. The ratio of different types of securities obtained by a corporation from external equity from ordinary shares, internal equity from retained earnings, and preference shares is known as capital structure (Samuel, 2016). This demonstrates how extensively scholars have looked at the factors influencing capital structure from their perspective. However, the factor affecting the capital structure of SACCU in the East Wollega zone has not yet been studied. In order to address this vacuum, this study has sought to identify the key factors that influence the capital structure of the "Agadhaga'ii" Savings and Credit Cooperative Union in East Wollega Zone, Oromia Regional State.

Identification of the Issue

When the cost of capital is at its lowest, the optimal capital structure is obtained, which aids the management team in controlling the cost of capital (Richard et al.,2014). Ahmed and Wang (2011) examined capital structure determinants from empirical studies of manufacturing firms; Umer (2013) examined capital structure determinants of large taxpayer share companies in Ethiopia; Onaolapo et al. (2015) examined capital structure determinants from studies of Nigerian quoted companies; and Singh (2016) examined panel data analysis of capital structure

determinants and significantly discovered a negative relationship between profitability and capital structure determinants.

This demonstrates that many academics have, from their perspective, looked at the factors affecting capital structure. The SACCU's determining capital structures, however, have not yet been studied in the East Wollega zone. Thus, the factors influencing the capital structure of the "Agadhaga'ii" Savings and Credit Cooperative Union in the East Wollega Zone of the Oromia Regional State were evaluated through this study.

These precise objectives were sought to be attained by this study:

To investigate the impact of profitability on 'Agadhaga'ii' Savings and Credit Cooperative Union's capital structure,
To look into how liquidity affects 'Agadhaga'ii' Savings and Credit Cooperative Union's capital structure.

To investigate the effects of age, non-debt tax shelter, and growth on the capital structure of the "Agadhaga'ii" Savings and Credit Cooperative Union.

To pinpoint key determinants of the "Agadhaga'ii" Savings and Credit Cooperative Union's capital structure,

Review of relevant writings

Adugnaw and Guruswamy (2016) attempted to empirically investigate the factors influencing the capital structure of a few Ethiopian insurance businesses. In fact, only secondary data from the yearly financial statements of a few chosen insurance firms, the National Bank of Ethiopia (NBE), and the Ministry of Finance and Economic Cooperation were employed by the researchers to accomplish the goal. The results showed that company risk, management effectiveness, and ageCapital structure and inflation have a positive association, but firm expansion and inflation have a negative relationship. Leverage was unaffected by asset size, liquidity, or tangible-ness. In order to reduce the weighted average cost of capital, the study concludes that the management of the chosen insurance businesses should concentrate their time and efforts on factors including age, business risk, management effectiveness, firm growth, GDP, and inflation.

For a chosen sample of 31 airline firms with continuous financial data from 2004 to 2015, Kiraci and Aydin (2018) examined the evidence on the factors that determine the capital structure of traditional airlines. The factors under research were firm size, growth potential, profitability, a non-debt tax shelter, business risk, asset structure, and liquidity as explanatory variables, with capital structure acting as a dependent variable. The findings indicated that capital structure has an inverse association with liquidity, profitability, business risk, and tax shield, but asset structure, growth potential, and company size had positive relationships with capital structure.

The goal of Ali's (2018) research was to look into the factors that affect capital structure and test hypotheses for Bangladeshi food and associated industries. Profitability, tangible-ness, expansion, operating leverage, liquidity, and size were employed by the researcher as independent factors, whereas capital structure or leverage was used as a dependent variable.

RESULT ANALYSIS METHODS

Research Approach

The major goal of this quantitative analysis is to identify the factors that influence the capital structure of SACCU. Therefore, combinations of descriptive and explanatory research designs were used in the study. Ratios were utilized in the descriptive design to emphasize the factors affecting the capital structure of SACCU, and an explanatory investigation was carried out to establish and clarify the causal connection between the variables. This gave the researcher the opportunity to investigate the relationships between capital structure, profitability, age, liquidity, growth, and the SACCU's non-debt tax shelter.

Target populations

The East Wollega Zone Savings and Credit Cooperative Union, whose financial structure includes debt and equity finance, is the study's target population. The Savings and Credit Cooperative Union, which is located in the research region, serves as a representative of the population for this study. Therefore, only members of the "Agadhaga'ii Savings and Credit Cooperative Union" were regarded as the target demographic.

Sampling Techniques and Sampling Frame

In exceptional circumstances, often when the population shares a great deal in common, the Non-Probability Sampling Techniques have been applied. Because there haven't been any studies done on the factors affecting the capital structure of SACCUs, there aren't any complete secondary data available for the study period, and the study unit needs to comprehend the capital structure positions, among other reasons, East Wollega Zone and Agadhaga'ii SACCU was purposefully chosen.

SACCU working in the research region is part of the sample frame. The SACCU was chosen because only this union was established in the East Wollega Zone, whereas the other unions are of different sorts, and because comprehensive audited financial accounts (balance sheets and income statements) are accessible for eleven straight years. Due to the aforementioned rationale, "Agadhaga'ii" Savings and Credit Cooperative Union were specifically chosen.

Data Sources and Types

This study only used secondary data from SACCU's audited financial statements (income statements and balance sheets) for the eleven-year period between 2008/2009 and 2018/19 in order to generate an appropriate ratio. As a result, the secondary data served as the study's primary information source. Since the majority of the data required for this investigation were quantitative in nature, this source has been selected.

Techniques and Methods for Data Collection

By using documentary analysis techniques and acquiring copies of the union's essential yearly audited financial statements through the inspection of papers, the data was gathered (data mining). The data sheet was employed as a data gathering tool because it serves to expose the factors that influence the capital structure of SACCU, which is appropriate given the nature of this study. Six participants in a focus group discussion cross-checked data obtained from secondary sources as part of the triangulation process.

Approach to Data Analysis

To ascertain if there is a link between the independent factors (determinants like profitability, liquidity, growth, age, and the non-debt tax shield) and the dependent variable, multiple linear regression and correlation analysis were used (leverage or capital structure, which is expressed as the total debt to total asset ratio).

The link between the independent and dependent variables, as well as the direction, magnitude, and strength of the relationship, were all examined using correlation analysis. The correlation between the independent variables was also verified using a correlation matrix. The capital structure of Agadhaga'ii Savings and Credit Cooperative Union's first, second, and third objectives were studied using Pearson correlation and regression to ascertain the influence and effects of explanatory factors.

Tables and graphs were used to show the data, which were then examined and interpreted in light of the study's goals before being followed by conclusions and suggestions.

The correlations between profitability, liquidity, growth, age, non-debt tax, and capital structure factors were summarized using descriptive statistics (means, minimums, maximums, variances, and standard deviations) (means and 95 percent confidence intervals).

Model Information

The majority of earlier empirical research on the determinants of capital structure employed multiple linear regression approaches with substitutes for the determinants that were used to account for the difference in leverage ratios among various businesses (Kibom, 2010; Nasimi, 2016; Guruswamy&Adugnaw, 2016; Gweyi et al., 2013). In order to predict the link between the capital structure (the dependent variable) and the explanatory factors such as profitability, liquidity, growth, age, and non-debt tax shields, multiple linear regression analysis was utilized.

Using multiple linear regression analysis, the model can be built as follows:

$$Y = \beta_0 + \beta_1X_{1t} + \beta_2X_{2t} + \beta_3X_{3t} + \beta_4X_{4t} + \beta_5X_{5t} \dots\dots\dots + \beta_nX_{nt} + \epsilon$$

Where: **Y**: Dependent Variable, **β₀**: Constant Coefficient (predicted value of Y when all other X values are zero), **β_n**: Regression Coefficient, **X_n**: Independent Variable, **e**: Error Term and **β₁-β₅** are Regression Coefficients for the Independent variables X of the union, denoting the nature of the relationship with dependent variable Y. Therefore, the Specified Model is:

$$LEV = \beta_0 + \beta_1PR_t + \beta_2LIQ_t + \beta_3GR_t + \beta_4AG_t + \beta_5NDTS_t + \epsilon$$

Therefore, in this study, to determine determinants of capital structure, PR, LIQ, GR, AG and NDTS were taken as the Explanatory variables (independent); whereas Leverage or capital structure was used as the dependent variables.

(Where, LEV= Leverage, PR =Profitability, LIQ=Liquidity, GR= Growth,

AG=Age, NDTS= Non-Debt Tax Shields; t is a time period from 2011/2012 to 2021/2022).

RESULTS AND DISCUSSIONS

Table: 1 Pair-Wise Correlation Matrixes between Explanatory Variables

Variables	PR	LIQ	GR	AG	NDTS
Profitability	1	-.339	.192	.610*	-.090
Liquidity	-.339	1	-.607*	-.805**	.321
Growth	.192	-.607*	1	.436	.065
Age	.610*	-.805**	.436	1	-.362
Non debt tax shield	-.090	.321	.065	-.362	1

Source: Financial Statements of Sampled SACCU Using SPSS Version 20, 2022

Table 1 demonstrates that the independent variables have essentially no significant pair-wise connection (PR, LIQ, GR, AG, and NTDS). As a general rule, multicollinearity is possible when a connection between explanatory variables is bigger than 0.80. (Kibrom, 2010).

The outcomes shown in Table 2 demonstrate the fitness of the regression model applied to the study's findings. As seen in Table 2, the computed R is 0.969. As the correlation coefficient, this number is shown. This indicates that there is a 96.9% correlation between the explanatory factors and the dependent variable.

R2 and squared error of the residuals are summarized generally in the table below, as shown in Table 2. The value

of 0.938 below the R square indicates that the chosen union-specific drivers, such as profitability, liquidity, growth, age, and non-debt tax shields, accounted for 93.8% of the variance in the study unit's capital structure. In other words, the independent variables in the model account for around 93.8 percent of the variation in the dependent variable.

Table 2. Model Summary of Leverage

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.969	0.938	0.876	0.078290

- a. Predictors: (Constant), Non debt tax shield, growth, profitability, liquidity, Age of formation.
- b. Dependent Variable: Leverage

Source: Financial Statements of Sampled SACCU using SPSS version 20, 2022.

Analysis of Variance (ANOVA)

Table 3 shows the outcomes of the analysis of variance (ANOVA). The ANOVA findings reveal that the total model was statistically significant at 0.005 for the model as a whole. Additionally, the findings suggested that the explanatory factors are reliable capital structure indicators (dependent variable). Additionally, an F-statistic of 15.137 suggests that all of the variables are significant.

Table 3. Analysis of Variance (ANOVA) Overall Significance

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.464	5	.093	15.137	.005
	Residual	.031	5	.006		
	Total	.494	10			

- a. Dependent Variable: Leverage
- b. Predictors: (Constant), Non debt tax shield, Growth, Profitability, Liquidity, Age of formation.

Source: Financial Statements of Sampled SACCU using SPSS version 20, 2022.

Table 4. Regression Result of Leverage and the Explanatory Variables

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.058	0.214		4.957	0.004	0.510	1.607
Profitability	3.025	1.340	0.340	2.257	0.074	-0.421	6.470
Liquidity	-0.272	0.060	-1.029	-4.499	0.006	-0.427	-.117
Growth	-0.377	0.298	-0.189	-1.263	0.262	-1.144	0.390
Age	-0.005	0.017	-0.073	-0.300	0.776	-0.048	0.038
Non debt tax shield	18.542	5.655	0.421	3.279	0.022	4.005	33.080

- a. Dependent Variable: Leverage

Source: Financial Statements of Sampled SACCU using SPSS version 20, 2022.

The regression output shown in Table 4 above contains the most crucial data.

The names of the independent variables (PR, LIQ, GR, AG, NDTs) are listed in the first column, and _cons is the constant term (intercept) of the regression. The values of the coefficients (0, 1, 2, 3, 4, 5) and (Std. Err.) represent the standard errors associated with the coefficients in the second column, Unstandardized Coefficients. Beta coefficients are shown in the third column. The (T) value is displayed in the fourth column along with the t-statistics that were used to determine if a certain coefficient was statistically significant if the T-value was more than two or two.

A measure of the significance in the regression model is shown in the fifth column, significant (P-value). The sixth column displays the confidence interval for the beta standardized coefficients, and if the P value is less than or equal to 0.05, it means that there is a significant link between the dependent and independent variables. The researcher obtained the regression equation shown below from Table 4.

The Estimated Regression Equation:

Capital Structure = 1.058 + 3.025 Profitability - 0.272 Liquidity - 0.377 Growth - 0.005 Age + 8.542 Non-debt tax shields.

The explanatory factors, such as profitability, liquidity, and non-debt tax shield, are those that substantially affect the dependent variable, according to the t-statistics. At 10%, 5%, and 1% percent, respectively, profitability, the non-debt tax shield, and liquidity are all substantial.

According to the coefficients for liquidity, growth, and age, the capital structure of savings and credit cooperative unions operating in the East Wollega Zone is negatively correlated with each of those variables, suggesting that rising levels of those variables result in falling levels of capital structure.

According to their coefficients, profitability and non-debt tax shelter are positively correlated with capital structure, suggesting that rises in those variables also lead to increases in the capital structure of Savings and Credit Cooperative Unions operating in the East Wollega zone.

The results of the regression model for the capital structure of the Agadhaga'ii Savings and Credit Cooperative Union are summarized in Table 4 so that you can see what effects the independent variables had on the dependent variable.

Recommendations

According to the study's findings, the studied SACCUs' mean capital structure was 67.42%, indicating a high degree of debt leverage and a reliance on debt financing as a source of funding that might put the union at danger of going bankrupt. The union should work to manage its debt to optimal levels, which will inevitably give it a good capital structure, and to develop an optimal combination of debt and equity that minimizes the weighted cost of capital while maximizing the stock price of the company. This is true even though it is uncommon for any firm to rely solely on equity finance. To generate value for cooperative owners and raise returns to equity holders of the union, the Board of Directors and managers should use financial capital structures.

The regression analysis showed a substantial relationship between capital structure and the independent variables of profitability, non-debt tax shelter, and liquidity. In order to reduce the weighted average cost of capital, the researcher advised the management bodies of the sampled SACCUs to focus their attention on those factors.

The findings of this study showed that the capital structure of the study unit was not significantly influenced by age or growth. The researcher therefore advised against the management bodies of the sampled SACCUs using those factors while determining the best level of financial leverage.

The results of this study demonstrate that liquidity significantly negatively affects the study unit's capital structure. The management team of the research unit is required to uphold a high standard for the liquidity ratio, which will be utilized to define the ideal capital structure.

The results of this study show that non-debt tax shelters significantly improve the capital structure of the study unit. Despite the fact that it is not advisable for Savings and Credit Unions to maintain sizable stockpiles of fixed assets, the union must have the right number of tangible assets in order to reduce the amount of tax it must pay to the relevant government agencies since depreciation is a non-cash outflow expense. Therefore, the study unit lowers the amount of tax to be paid by decreasing the amount of depreciation expenditure.

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