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The Effect of Corporate Taxation on Financing Decision: Evidence from Ethiopian Food and Beverages Companies

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Abstract
This study examines the effect of corporate taxation on the financing decisions of listed companies in the Ethiopian Food and Beverage companies. Data for the study was collected from documentary sources consisting of the annual reports and accounts of the sampled companies. Being both time series and cross-sectional, Panel data methodology was adopted for data analysis, The Ordinary least squares, Fixed effects, and Random effects were used to estimate the regression model. It is found that despite the tax benefits of debt, the companies were generally low-geared; however, corporate taxation influences their financing decisions. The findings of this study lend weight to both the pecking-order and trade-off models as a fitting description of the capital structure behavior of the companies. The study recommends that the companies should not over-rely on their retained earnings as a source of finance, but explore other external sources, particularly the use of debt to benefit from its tax advantage.

Keywords: Corporate taxation, capital structure, trade-off theory, pecking order theory

1. Introduction

Since the seminal works of Modigliani & Miller [42] and the subsequent one by Miller [41], several studies have been carried out on the capital structure of firms and its determinants. What aroused the interest could not be unconnected with some of the basic assumptions by Modigliani & Miller (MM), one of which is that capital structure, that is, the financing mix is irrelevant where there are no taxes. This implies that the quantum of debt about equity is of no effect on a firm's value in the absence of taxes. Consequently, in different countries of the world, like the United States, United Kingdom, Italy, Japan, Korea, Canada, Germany, and a host of others, studies have been conducted to examine the influence of taxation and other factors on the capital structure or financing decisions of firms.

Despite the increasing interest and studies about corporate taxation and capital structure globally, however, little or no concern has been shown to this issue in Ethiopia. Therefore, while several determinants of capital structure including taxes have been found from empirical studies in other countries, very little is known about their empirical relevance and impact in Ethiopia. This is because most of the international studies rely mainly on data from developed nations and few developing ones, but excluding Ethiopia. Also, at the local level, studies about the determinants of capital structure, particularly the influence of corporate taxes have not attracted much attention from researchers. However, the determinants of capital structure in other countries as found by the studies cannot automatically be applied to Ethiopia largely as a result of socioeconomic differences.

Previous works on this aspect in Ethiopia like Otusanya [51] are defective because he relied only on the opinions of managers and did not substantiate such opinions by examining the financial records of the companies to establish any relationship between corporate taxes and capital structure decisions of firms. Another work by Omole & Falokun [48] failed to justify their standpoint that the low debt-equity ratio after liberalization may be attributable to lower tax costs as they have not offered concrete and empirical evidence to buttress their assertion. Most of the other works on Ethiopia either did not directly investigate the effect of corporate taxation on the capital structures of companies Adelagan, [3] or examine the effect of corporate taxation but studied few companies drawn from several industries Udoayang & Asuquo, [61].

One peculiar and common attribute of these studies is that they do not have a clear focus on a specific industry or some specific industries and, as a result, their findings are rather general and not definite about any industry or group of industries. Therefore, it remains to be seen clearly how corporate taxes affect the financing decisions of listed companies in Ethiopia, with specific reference to the industry selected for investigation in this study. This necessitates a study in this aspect to determine if the situation reported in other countries is true of Ethiopia, and particularly in the chosen industry.

2. Literature Review

While some empirical studies establish a positive relationship between corporate taxation and capital structure, some find a negative relationship. Yet, some others document that there is no relationship between corporate taxation and capital structures. For example, in the studies by Long & Mayers [44], Bayless & Dittz [10], and Barclay, Smith & Watts [58], they

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find that taxation plays an insignificant role in capital structure decisions. Though Udoayang & Asuquo [61] analyze only four quoted firms in Ethiopia using the OLS multiple regression techniques, they find that corporate income tax has a positive impact on the capital structure of three of the firms. Engel, Erickson & Maydew [22] test, among other things, the tax effect of redeeming the traditional preferred stock for trust preferred, which is treated as debt finance. They find that firms derive substantial net tax benefit when they substitute trust preferred stock for the traditional preferred stock. Rajan & Zingales [56] investigate the determinants of capital structure decisions by public firms across the G-7 countries. Using maximum likelihood and a censored Tobit model to estimate their regression, they find that the use of debt appears to be higher in countries with the higher corporate tax rate, suggesting a positive impact of corporate taxation on leverage. Similarly, Ely, Houston & Houston [21] examine the link between a firm's expected Marginal Tax Rate (MTR) and its use of preferred stock as an alternative to financing with long-term debt. They conclude that the financing behavior of a firm is consistent to enhance their tax benefit. Furthermore,
Group (2002) examines the impact of local taxes on the capital structure decisions of firms in Germany. The local taxes are those levied on profits of companies in addition to the Federal taxes. Group reports that taxes create substantial incentives for firms to use debt finance and, therefore, the taxes significantly influence capital structure decisions.
Gordon & Lee [28] estimate the effects of change in the corporate tax rate on the debt policies of firms of different sizes in the US between 1950 and 1995. They observe that the tax rates in the US vary across firms of different sizes, and the relative tax rates are not static, thereby providing substantial information and an opportunity to identify the tax effects on financing decisions. They find that taxes have a strong and statistically significant effect on debt levels. Specifically, they show that by cutting the corporate tax rate by 10% e.g. from 46% to 36% and holding personal tax rates fixed, it could be forecast that the proportion of assets financed with debt will reduce by about 3.5%. However, the document that the positive tax impact is much smaller for intermediate-sized firms suggests that the responsiveness to tax rate changes in capital structure decisions differs substantially by the size of the firm.
Contos [13] extends Gordon & Lee's [28] study using data from the same source, the US statistics of income (SOI), corporate income tax returns as well as from microdata files, and covering the period 1993 to 2000. When the weighted average marginal tax rate reported in SOI was introduced, Contos finds a negative effect of the tax rate on debt level. However, using marginal tax rate constructed from taxable income before interest, Contos finds the expected positive relationship between tax rates and debt level for all three firm sizes (small, intermediate, and large). Contos concludes that their results are not qualitatively different from those of Gordon & Lee. Similarly, Gertler & Hubbard [27] reports that distortion caused by the US tax system may be an important factor in creating a situation of excessive leverage because the tax destructibility of interest charges provides a major advantage of using debts. This agrees with the position of Swanson, Seetheraman & Srinidhi [59] who argue that the major factor that encourages the use of debt is the tax subsidy on interest payments and, as a result, increased corporate tax rate makes debt more attractive. In the same way, according to Shum p. [57], a lower corporate tax rate reduces the advantage of debt finance.
Peles & Sarnet [53], Nadeau [46], Graham, Hayn, Ofer & Sarig [32] Plesko [54], and Smith [58] use special opportunities following some forms of tax reforms to study the impact of taxation on the financial policy of firms. They all find that taxes play a major role in the financing decisions of firms. In the case of Peles & Sarnet [53], they examine the relationship between corporate taxes and the capital structure of firms in Britain between 1961 and 1971 capitalizing on a major change in the British corporate tax law (Finance Act of 1965 effective in 1966). They divided the time frame into two periods, five years before the change and five years after the change as they observe that there was relative stability in macro-economic variables, particularly, the inflationary trend. They find that taxation has a pronounced impact on a firm's financial policy as the debt-equity ratio of the period after the change almost doubled that of before the change.
Nadeau [46] estimates the impact of taxation on the financial decisions of firms using the opportunity offered by the Tax Reform Act of 1986 in the US. Among other things, Nadeau finds that the Reform reduces corporate leverage. In the same manner, Grafund, Hayn, Ofer & Sarig [29] study the effect of the US Tax Reform Act (TRA) of 1986 on the capital structure of firms. They opine that a major difficulty in establishing a relationship between taxation and capital structure has been how to control the intervening variables like the statutory tax rates which do not often change, but the opportunity offered by the reform has made the assessment of the interaction possible because the reform brought about a reduction both in the corporate tax rates and personal tax rates. Consistent with the tax-based theories, they report that firms with high tax rates before the reform reduced their debt level after the reform. Also, according to Plesko [54], the Tax Reform Act of 1986 provides a natural experiment for analyzing the influence of taxes on corporate leverage decisions. Plesko notes that the centerpiece of the reform was the reduction of the maximum statutory corporate marginal tax rate from 46% to 34%. Plesko shows that the volume of corporate debt in 1988 is estimated to have been $312 billion lower than it would have been without the reform. Further, Smith [58] investigates the effects of the Tax Reform Act of 1986 on the capital structure of foreign subsidiaries and finds that the US multinational companies increase the debt level of their foreign subsidiaries after 1986, while the non-US multinational companies do not.
Utilizing a similar opportunity of tax reform, Podzena [55] explores the role of tax policy in the financing mix as well as reasons for the rise in debt levels of the US non-financial corporations between 1935 and 1982. Podzena finds that the trends are attributable to the tax policy and concludes that the changes in the federal tax policy then would likely make the preference for debt financing to continue. Furthermore, Groud & Murinde [26] examine the impact of tax policy on the corporate debt of unquoted companies in India. They find, among other things that tax policy plays a major and plausible impact on leverage decisions of firms as their effective tax rates have significantly likely co-efficient. They corroborate this finding by evaluating the impact of the 1990s tax reform in which tax rates were reduced considerably and they find the reform has substantially reduced outstanding unquoted companies' debt by about 17%.
In a study of the effects of taxes on corporate capital structure in Korea, Choi [16] finds that firms consider corporate tax benefit of debt in making financing decisions, and argues that as a result of recent changes in the tax system of Korea that reduce tax advantage of debt, firms have responded by

reducing their leverage. On the whole, Choi concludes that taxes are a very important determinant of corporate capital structure in Korea. Mackie-Mason [40]. Investigates the effect of taxes on corporate financing decisions of firms in the US between 1977 and 1987 and concludes that there is a clear and substantial tax effect on financing choices. Mackinac-Mason finds that the desirability of debt financing varies with the effective MTR.

However, Faulkender & Petersen [23] find mixed evidence on the empirical relationship between MTR and leverage, which is caused by the different definitions of leverage adopted. When leverage is defined as total debt divided by total assets, they find a negative relationship. As this result is unexpected, they redefine leverage as long-term debt to the market value of assets and then find a positive result. Moreover, Groud [26] estimates the effect of expected corporate tax rates on the amount of debt issued by firms. Using ordinary least squares regression analysis and the US panel data between 1979 and 1991, the estimated measures of expected effective tax rates of the firm are related to a continuous measure of incremental debt financing. Group finds that increases in the expected effective tax rates are significantly and positively related to a higher level of debt financing. However, Cordes & Sheffrin [17], in their study, find that though there is an average effective tax advantage to debt finance, it is less than expected.

In a study of 128 Canadian companies by Shum [57] for the period 1979 to 1989, it is found that corporate taxes have significant effects on the firms' debt policy as the use of debt increases as past taxes paid increases. In contrast, Davis [18] examines whether effective tax rates are determinants of capital structures of 250 Canadian firms. Using the Spearman rank correlation and Kendall W and a period of 20 years (1963-1982), Davis finds there is a positive relationship between leverage and effective tax rate, but the statistical significance is not consistent. While eight years of the period show high statistical significance, the remaining years indicate statistical insignificance. Similarly, Bartholdy, Fisher & Mintz [24] investigate the influence of Canadian corporate tax rates on the debt-asset ratios of firms (1970-1982). They find that corporate tax rates have a strong, positive, and stable effect on debt-asset ratios (leverage).

Bauer [9] investigates the determinants of capital structure of listed firms in the Czech Republic for 2000 and 2001 using the ordinary least squares technique. Though Bauer uses a unique measure or a proxy variable to analyze the tax effects on leverage, that is, effective tax rate, which is defined as the difference between earnings before taxes and earnings after taxes scaled by earnings before interest and taxes, he finds, among other things, a positive relationship between effective tax rate and leverage. In the work of Dhaliwal, Heitzman & Zhen Li [20], the association between leverage, corporate and personal taxes, and firms' implied cost of capital is examined. The document that corporate taxes consistently explain the association between leverage and cost of equity, and conclude that the linkage between capital structure and cost of capital is affected by taxes. However, Benito [11], who investigates the capital structures of Spain and UK firms between 1973 and 1991 reports that corporate taxes do not play any role in their capital structure decisions. In an examination of the relative importance of 38 factors in the leverage decisions of publicly traded US firms, Frank & Goyal [25] find no strong relationship between leverage and tax rates. In the same vein, Fischer, Heinkel & Zechner (1989) [24] could not document any stable and significant tax effects on leverage.

Bartholdy & Mateus (2006) [7] analyze the impact of corporate taxes on the capital structures for a large sample of small and medium-sized unlisted but manufacturing firms in Portugal for the period 1999 to 2000. They argue that though there is increasing evidence that taxes matter for capital structure , the primary source of evidence is largely from listed US firms which because of their size advantage, are financially relatively sophisticated and have access to debt markets. This is not the same with small and medium firms and so, such results could not be generalized. They find that the existence of debt tax shields also has an important impact on the capital structure of small and medium-sized firms.

In a comprehensive study of the determinants of capital structure of the US firms, Taub (1975) [60] finds that the tax rate variable consistently has a negative co-efficient suggesting that increases in the tax rate harm the desired debt-equity ratio. While this finding is inconsistent with both the traditional and MM views of capital structure, it is in accord with that of Negash (2002) [47], who, using data from the Johannesburg Stock Exchange also reports a negative effect of the tax rate on leverage. Furthermore, in the works by Opler, Saron & Titman (1977) [50], Vasiliou (2005) [63], and Abor & Biekpe (2005) [1] an inverse relationship is documented between corporate tax and debt ratio.

Unlike most other studies that focus on a substantial number of firms, Graflund (2000) [29] studies only a firm and the findings support a long-run relationship between corporate tax variables and total debt level. Bontempi, Giannini & Golinelli (2005) [12] measure the relationship between fiscal variables and companies' debt choices in Italy, and find that the tax effects on debt ratio are robust and significant. Using empirical model, Ju, Parrino, Poteschman & Weisbach (2005) [37] conclude that the major factors affecting financing decisions are corporate taxes and bankruptcy costs. Yet, Huang & Ritter (2007) [36] find that firms finance a larger proportion of their deficit with debt when the corporate tax rate is higher. This is consistent with the trade-off theory (TOT) prediction that debt is used as a tax shield.

3. Methodology

This study applied a non-survey approach. The work involved the collection and utilization of documentary firm-level data from annual reports and accounts of the selected companies from the chosen industry for the period of twelve (12) years (1995-2006) under investigation. The study covers listed companies in the Food, Beverages, and Tobacco industry but only those firms that have been listed at least since 1994 and have remained in operation up to the end of 2006. In the absence of a tobacco company that qualifies for inclusion based on the stated criteria, the industry is thus referred to as Food and Beverages

1. The variables used in this study are categorized into two viz: The dependent variables and
2. The explanatory or independent variables.

Dependent Variables: These consist of the following proxies of financing mix or capital structure:

1. **Total Debt-to-total assets (TDTA):** This is total debt (long-term and short-term) over total assets as used by Upneja & Dalbor (2001) [62], and
2. **Total Debt to capital (TDC):** This is measured by dividing total debt by the sum of total debt and equity as used by Moi (1999).

Explanatory Variables: These consist of tax variables and control variables.

Tax Variables: These include the following:

i) **Statutory Tax Rate (STR):** This is the nominal tax rate fixed by the government and applicable to all companies operating within the shores of Ethiopia or registered in Ethiopia. The STR has been used by Negash (2002) [47] and Bartholdy & Mateus (2006) [7].

ii) **Effective Tax Rate (ETR):** This is determined by dividing actual taxes paid by earnings before interest and tax (EBIT). This is employed as Davis (1987) [18] and Graham (1996 & 2000) [30, 31] advise that inconsistency with theory, the relationship between debt level and its tax benefit be determined using tax rates before the calculation of the effect of debt finance.

iii) **Tax loss carryforwards (TLCF):** This is determined by dividing earnings before taxes by total assets as used by Frank & Goyal (2003) [25].

Control Variables (Factors): Though this study sets out to primarily examine the effects of corporate taxation on financing decisions, other non-tax factors commonly thought to drive capital structure policy are also accounted for as done in several similar studies by Givoly, Hayn, Ofer, & Sarig (1992), Shum (1996) [57], Gropp (2002) [34], Green & Murinde (2007) [33] and Cheng & Green (2008) [15]. This is also in conformity with the extant theoretical and empirical work on capital structure. The variables included are profitability, age, growth potential, size, tangibility, and probability of bankruptcy. The measurement of each of these variables is discussed hereunder.

i) ***Profitability (PROF):*** This is measured by dividing EBIT by total assets.

ii) **Age (AGE):** Age is a measure of reputational variable and informational transparency that might influence the willingness of creditors to lend their funds. As knowledge about a firm's existence may be more when it is publicly traded and not necessarily how long it has existed, age is measured as the number of years since listing. This has also been employed by Upneja & Dalbor (2001) [62].

iii) **Growth (GRW):** This is measured by the change or annual growth rate in total assets.

iv) **Size (SIZ):** This variable is measured by the log of total assets.

v) **Tangibility (TANG):** This is measured as total fixed assets divided by total assets.

vi) **Probability of bankruptcy (ZPB):** This is measured using the Altman's Z score provided by Altman (1984) but excluding the ratio of market equity to book debt. It is defined as:

ZPB = [3.3(EBIT) +1.0(sales) +1.4(retained earnings) +1.2(working capital)] /total asset

This has been used in the studies by Mackie-Mason (1990) [40] and Leary & Roberts (2005) [38].

In analyzing the data, the multiple regression techniques using panel data methodology are employed as done in a similar study by Gaud, Jani, Hoesli & Bender (2003). This is chosen because the panel character of the data, that is, its combination of time series as well as cross-sectional attributes justifies the adoption of a panel data methodology. The effects of some explanatory variables and the control variables on leverage are only noticeable at least one year after their occurrence. Accordingly, such explanatory and control variables are lagged one year as done by Vasiliou (2005) [63]. In line with the variables identified and discussed, the empirical result of this study is thus based on the following regression model:

$$DRi,t = a1 + \beta 2STRi,t-1 + \beta 3ETR\ i,t-1 + \beta 4TLCF\ i,t-1 + \beta 5PROF\ i,t.-1 + \beta 6AGE\ i,t + \beta 7GROW\ i,t + \beta 8SIZE\ i,t + \beta 9TANG\ i,t + \beta 10ZPB\ i,t + Ei,t$$

The ordinary least square (OLS) is one of the methods used to estimate the regression equation. According to Abor (2005), OLS provides a consistent and efficient estimate of a and β. However, since pooled OLS assumes constant co-efficient for both the intercept (a) and slopes (β), the Fixed effects and Random effects estimators, which are common techniques for analyzing panel data are also employed.

4. Results

Table 1. Presents the descriptive results. It shows that the mean TDTA of the firms studied is about 15% while that of TDC is approximately 25% suggesting that the companies are not over-leveraged.

Table 1: Descriptive Statistics of Dependent and Independent Variables.

Variables	Obs	Mean	Std. Dev.	Min	Max
TDTA	89	0.1467	0.1530	0.0000	0.5670
TDC	89	0.2534	0.2928	0.0000	1.7010
STR	92	0.3087	0.0191	0.3000	0.3500
ETR	89	0.1625	0.1032	0.0000	0.4100
TLCF	90	0.2063	0.1327	0.0110	0.5540
PROF	90	0.2249	0.1283	-0.0270	0.5540
AGE	92	21.087	7.2334	2.0000	34.000
GRW	88	0.2389	0.2448	-0.1320	1.5500
SIZ	91	9.5520	0.7642	7.6200	10.710
TNG	91	0.3032	0.1661	0.0220	0.6850
ZPB	91	2.9895	1.1146	-0.6100	6.8700

The maximum STR, being a rate fixed by the government, is 35% and the minimum is 30% for the period of the study. The mean ETR of the firms is about 16% of earnings before interest and taxes (EBIT). The sharp variation between ETR and STR is partly because while STR is applied on the taxable profits ascertained under relevant statutory provisions, ETR relates actual tax payment to EBIT. In this case, EBIT would in most cases be higher than taxable profits and, as a result, ETR and STR would rarely be equal. The average TLCF for the companies is approximately 21%. of total assets, but it has high volatility as the standard deviation amounts to 13%. The mean PROF is about 22% of total assets. PROF has a maximum value of about 55% and a minimum loss of 3% approximately. The volatility in PROF is also high considering the standard deviation of over 12% of total assets. The mean AGE of the companies since the listing is 21 years. Age ranges between a maximum of 34 years and a minimum of 2 years. A minimum of 2 years indicates that the company was listed two years before 1995, while the maximum of 34 years means that in a relevant year the company was listed for 34 years. The mean growth prospect (GRW) of the firms is about 24%. The maximum GRW is 155%, while the minimum GRW is -13%. This substantial difference between the maximum and minimum GRW is manifested in the standard deviation of more than 24%. On average, the

companies did not witness stable growth within the period of the investigation.

On the size, there is no wide variation between the companies as indicated by the standard deviation of 0.76 and a mean of 9.55. The proportion of tangible assets to total assets (TNG) of the companies is 30%, indicating that about 70% of the companies' total assets constitute current assets and investments. The mean ZPB is about 3.0, suggesting a low probability of bankruptcy. However, the standard deviation of 1.11 and a minimum ZPB of -0.61 are signs of wide disperse in ZPB. This indicates that some firms exhibit a high likelihood of bankruptcy.

Table 2 shows the correlation matrix of dependent and independent variables. The table shows that correlations are low except the correlations between TDTA and TDC as well as PROF and TLCF. Thus, the problem of col-linearity, if any, has been minimized.

Table 2: Correlation Matrix of Variables.

Variables	TDTA	TDC	STR	ETR	TLCF	PROF	AGE	GRW	SIZ	TNG	ZPB
TDTA	1.000										
TDC	0.848*	1.000									
STR	0.008	0.005	1.000								
ETR	-0.160	-0.137	0.044	1.000							
TLCF	-0.358*	-0.209	0.153	0.260*	1.000						
PROF	-0.240*	-0.072	0.196	0.276*	0.952*	1.000					
AGE	-0.159	-0.102	-0.332*	0.439*	0.180	0.168	1.000				
GRW	0.151	0.043	0.370*	0.136	0.133	0.151	0.021	1.000			
SIZ	0.382*	0.319*	-0.278*	-0.015	-0.153	-0.109	0.392*	-0.045	1.000		
TNG	0.248*	0.216*	-0.117	-0.288*	-0.166	-0.201	-0.121	-0.179	0.626*	1.000	
ZPB	-0.541*	-0.465*	0.075	0.431*	0.474*	0.479*	0.115	0.164	-0.443*	-0.528*	1.000

Since correlation only shows the relationship between variables and does not measure the effect of one variable on the other, inferential statistics, using panel data regression technique is employed and the results of the estimations are presented in Table 3.

5. Discussion of Regression Results

The results of the 3 estimation techniques are presented in Table 3. By coincidence, the results of OLS and Random effects are the same; nevertheless, they are all presented. As evidenced by the F-statistics/wald and corresponding P-values, the six models are validated. The p-values for the general model each in each of the regressions are extremely valid, thereby proving their validity.

Table 3: Regression Results.

IND VARs	Dependent Variables					
	OLS		Fixed effects		Random effects	
	TDTA	TDC	TDTA	TDC	TDTA	TDC
CONSTANT	0.3964	0.7949	1.1031*	1.6996	0.3964	0.7949
	1.0600	0.9400	1.8000	1.2400	1.0600	0.9400
STR	-1.5960**	-1.8629	-2.8725***	-4.4443**	-1.5960**	-1.8629
	-2.0200	-1.0400	-3.2500	-2.2500	-2.0200	-1.0400
ETR	0.2546*	0.3273	0.3473**	0.5331	0.2546*	0.3273
	1.8500	1.0500	2.2400	1.5400	1.8500	1.0500
TLCF	-1.1390***	-2.8555***	-0.5037	-1.5345	-1.1390***	-2.8555***
	-3.7600	-4.1500	-1.1500	-1.5700	-3.7600	-4.1500
PROF	1.1420***	3.2194***	0.3308	1.2844	1.1420***	3.2194***
	3.6200	4.4900	0.6800	1.1800	3.6200	4.4900
AGE	-0.0087***	-0.0088*	-0.0270***	-0.0571***	-0.0087***	-0.0088*
	-3.8300	-1.7100	-3.1800	-3.0100	-3.8300	-1.7100
GRW	0.1473***	0.1112	0.1404***	0.1479	0.1473***	0.1112
	2.9600	0.9800	2.7800	1.3100	2.9600	0.9800
SIZ	0.0582**	0.0446	0.0674	0.1567	0.0582**	0.0446
	2.1800	0.7400	0.9600	1.0000	2.1800	0.7400
TNG	-0.1442	-0.1222	-0.0236	0.1058	-0.1442	-0.1222
	-1.3100	-0.4900	-0.1900	0.3900	-1.3100	-0.4900
ZPB	-0.0654***	-0.1318***	-0.0717***	-0.1723***	-0.0654***	-0.1318***
	-4.4400	-3.9300	-4.3700	-4.7000	-4.4400	-3.9300
No. of Obs	86	86	86	86	86	86

R- Squared	0.5599	0.4246	-	-	-	-
F- value	10.741	6.231	4.05	3.95	-	-
Wald	-	-	-	-	96.67	56.08
P-value	0.0000	0.0000	0.0003	0.0004	0.0000	0.0000
R- Squared:						
Within	-	-	0.3457	0.3402	0.2077	0.1919
Between	-	-	0.4104	0.2165	0.9630	0.8811
Overall	-	-	0.3235	0.1806	0.5599	0.4246
rho	-	-	0.7491	0.8075	-	-
F-value u_i = 0	-	-	2.58	3.02	-	-
P-value	-	-	0.0203	0.008	-	-

***Significant at the 1% level. **Significant at the 5% level. *Significant at the 10% level the t and z-statistics are in italics

In the OLS estimation, the R2 of 42% and 56% for TDTA and TDC respectively indicate the percentage change in these measures of capital structure caused by the explanatory variables (tax variables and control variables). In all the estimations, the effective Tax rate (ETR) shows anticipated signs, and they are statistically significant under TDTA. The positive impact of corporate taxation (ETR) on the capital structure or financing choice as reported under the fixed effects is consistent with the trade-off theory (TOT) and empirical findings of Bartholdy (1989), Graham, Lemmon & Schallheim (1998) [32], and Alworth & Arachi (2001) [5]. However, contrary to prediction, STR negatively impacts the capital structure, and the relationship is statistically significant in the estimation of the Fixed effects under both TDTA and TDC. In the OLS and Random effects, the significant negative effect of STR only occurs under TDTA. Though empirical studies by Taub (1975) [60], Negash (2002) [47], Abor & Biekpe (2005) [1] and Contos (2005) [13] have documented an inverse relationship between corporate tax rate variables and capital structure decisions, the negative coefficient of STR could be a result of the fact that STR does not change frequently in Ethiopia, and so ETR, which is derived from actual tax payment is a more effective measure of applicable tax variable.

There is a strong negative effect of TLCF on the capital structure under the OLS and Random effects but an insignificant negative effect in the fixed effect estimation. This relationship is in accord with the DeAngelo & Masulis (1980) [19] hypothesis that as TLCF increases or as earnings of a business falls, less debt would be used. Also, PROF has strong positive coefficients under OLS and Random effects estimation. There is also a positive but insignificant effect of PROF under the fixed effects. This result supports the trade-off theory that profitable firms use more debt to take advantage of interest tax shields.

In all estimations, AGE has positive and significant coefficients. Though this finding is in line with the prediction of trade-off theory that older firms use more debt because they are less susceptible to bankruptcy, it contradicts the pecking order theory (POT) of Myers (1984) [44] and Myers & Majluf (1984) [45], which posits that older firms have accumulated earnings and so would use less debt finance. GRW also has positive coefficients in all estimations but is statistically significant under TDTA, an indication that as the growth rate increases, the firms tend to use more debt. This is consistent with POT that fast-growing firms might exhaust their retained earnings and would resort to using more debt. Similarly, SIZ has positive coefficients generally and statistically significant under TDTA in the OLS and Random effects estimations. Thus, leverage increases with size. This lends support to TOT that since bigger firms are not often prone to bankruptcy, they are more financed by debt.

Though the coefficients are insignificant, in all estimations, except in the fixed effects under TDC, TANG harms capital structure. These results contradict the predictions of both POT and TOT, but they agree with the findings of Bauer (2004) and Abor & Biekpe (2005) [1]. A plausible reason for these results is that the debt or bond market has not been developed in Ethiopia to encourage debt financing and take into consideration all the necessary criteria for granting credit, including the availability of adequate collateral. It could also be because debt-holders treat the issue of collateral with levity. In the alternative, while tangibility is measured using the book value of assets, the value placed on such assets by the creditors might be based on professional valuation, which might invariably be different from book values.

Contrary to the predictions of the trade-off theory, but consistent with the finding of Leary & Roberts (2005) [38], ZPB has significant negative coefficients in all estimations, indicating that as the likelihood of bankruptcy rises, leverage increases. This suggests that as the probability of bankruptcy reduces firms tend to use less debt, perhaps because they have accumulated earnings.

6. Conclusion and Recommendations

This paper examines the effect of corporate taxation on the financing decisions of listed companies in the Ethiopian Food and Beverage Companies for a period of 12 years (1995–2006). The study confirms several previous findings despite the geographical and sample differences. Thus, the capital structure decisions of the companies from the results show some level of consistency with some theoretical propositions. Specifically, the major findings of the study include:

i) The companies are not awash with debt finance despite its tax advantages, perhaps because of the preference for high dividend payments
ii) Corporate taxation affects the financing decisions of the firms
iii) Though there is mixed evidence in several instances, profitability, age, growth potential, size, tangibility, and probability of bankruptcy, are among the factors that drive the capital structure decisions of the companies. These findings provide evidence that the pecking order and trade-off models are complementary in shaping the capital structures of the companies.

Based on the findings and conclusion drawn, the following recommendations are deemed pertinent:

The companies should not over-rely on their internal equity, that is, retained earnings, as their major source of finance.

They should embark on debt finance for its tax advantage of interest deductibility and also higher propensity to maximize value to shareholders.

There is a need for an efficient and well-developed debt market where debts can be traded just as stocks are traded in the Ethiopian Stock Market. This should be initiated by the authorities in the Ethiopian Capital Market like the Securities and Exchange Commission and the Chartered Institute of Stockbrokers.

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