Capital Structure Determinants: An Empirical Study of French Companies in the Wine Industry

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(Very first draft and preliminaries results)

Abstract: The main objective of the paper is to explain the leverage of French companies in the wine industry. Different capital structure theories are reviewed in order to formulate testable propositions concerning the levels of debt of the French wine companies. A number of regression models are developed to test the hypotheses.

1. Introduction

The main objective of the paper is to explain the leverage of French companies in the wine industry. Empirical studies do not lead to a consensus with regard to the significant determinants of the structure of the capital.
Step of the article: theories, variables, proxies for the variables. It is difficult to find variables which represent in a relevant way the theoretical determinants of the capitalization.
The problem arises again for the relation between the variables and the proxies which are used to measure them.

2. Theoretical discussion and empirical determinants

2.1.Theories of capital structure

Since the seminal Modigliani and Miller, 1958 paper showing that subject to some restrictive conditions the impact of financing on the value of the firm is irrelevant, the literature on capital structure has been expanded by many theoretical and empirical contributions.
Three principal theories aim to explain corporate leverage and its dynamic ([1]). According to the traditional (or static) tradeoff theory (TOT), firms select optimal capital structure by comparing the tax benefits of the debt, the costs of bankruptcy and the costs of agency of debt and equity, that is to say the disciplinary role of debt and the fact that debt suffers less from informational costs than outside equity (Modigliani & Miller, 1963; Stiglitz, 1972; Jensen & Meckling, 1976; Myers, 1977; Titman 1984). So optimal leverage minimizes cost of capital and maximizes firm value.
In the so called pecking order theory (POT) (Donaldson, 1961; Myers & Majluf, 1984; Myers, 1984), because of asymmetries of information between insiders and outsiders, the company will prefer the financing by internal resources, then by debt and finally by stockholders' equity. The debt ratio depends then on the degree of asymmetry of information, of the capacity of self-financing of the company and the various constraints which it meets in the access to the various sources of financing.
The dynamic trade-off theory (DTOT) tries a compromise between TOT and POT (Fischer, Heinkel, and Zechner, 1989; Leland, 1994, 1998). Although, due to information asymmetries, market imperfections and transaction costs, many companies allow their leverage ratios to drift away from their targets for a time, when the distance becomes large enough managers

[1] In this empirical paper we just outline the main framework of each theory.

take steps to move their companies back toward the targets. While the POT explains short-run deviation from the target, the traditional tradeoff theory holds in the long run.
According to the theory of the market timing and inertia, the structure of debt is the result at a given time of a historical process. According to the approach of the market timing (Jalilvand & Harris (1984), Korajczyk and Al (1991), Lucas & McDonald (1991), Jung and Al (1994), Loughran and Al (1994), Baker & Wugler (2002)) the leaders will carry out increases in the capital when they think that the actions are overestimated. A small debt ratio must thus follow a long period of Market to Book high ratio. According to Welch (2004), the companies quickly do not adjust their debt ratio to the fluctuations of the value of the stockholders' equity, one period of rise of the courses must thus be accompanied by small debt ratios. In the static approach of the theory of the trade off, it is a question of explaining the target debt ratio, the debt ratios of the companies are supposed to converge towards the target debt ratio, but the process of convergence is not explicitly taken into account. The empirical tests are carried out only on samples out of instantaneous cut. Dynamic approach (Fisher and Al (1989), Leland (1998)) explicitly model the process of adjustment dynamic of the debt ratio towards the target debt ratio. This approach raises several questions: do the companies have they a target debt ratio? If the answer is positive, which is the speed of adjustment towards this ratio? Lastly, which are the determinants this speed of adjustment? In comparison with the literature, no consensus seems to have emerged on the answer to these three questions. The answer to the first question is still largely discussed. Baker and Wurgler (2002) notice that the effects of the market timing of the issues of shares on the structure of the capital are long. The firms thus do not seem in a hurry to adjust the debt ratio. The authors conclude from it that the debt ratio is more the result of the history of the emissions of stockholders' equity than that of a dynamic optimization. Welch (2004) also interprets the inertia of the companies presented higher like an element of proof of the absence of convergence towards an optimum ratio. The answers to the second question are not homogeneous: - relatively slow speed (Taggart (1977), Fama & French (2002)), - relatively fast speed (). Lastly, with regard to the third question, the answers are varied. The speed of adjustment depends on the liquidity on the credits on the firm Taggart (1977), of the nature of the sources of financing available Marsh (1982). A variation can exist between the real debt ratio and the debt ratio targets not only because of the costs of transaction but also because the companies are subjected to certain numbers constraints of access to the various banking sources of financing or market (Jalilvand & Harris (1984), Myers (1984)).

2.2.Empirical determinants of capital structure

As in much empirical research, theoretical constructs must be proxied indirectly through the use of firm or environmental characteristics. The links between the theoretical determinants and the variables chosen in the empirical studies are complex. Their justification rests on the mobilization of additional theories and on purely empirical observations. So the selected empirical variables suffer from several weaknesses:
- Length of the causal chain which connects the variable chosen to the theoretical determinants and then with the debt ratio itself,
- Ambiguity of the variable influence on the capital structure. Indeed, the selected variable can have contradictory effects on the capital structure owing to the fact that several causal chains connect it to the debt ratio or that some purely empirical relations are not generally accepted.
Several causal chains on the basis of the explanatory variable can lead to the explained variable outcome with relations in contrary direction or relations in the same direction for two different theories. In this case there is not decides between theories. For example, according

to a first causal chain, the firms of big size have relatively less costs of bankruptcy what allows them higher debt ratios. According to one second causal chain, asymmetry on the firms of big size is lower, from where the least required to be financed in-house or by debt and a smaller debt ratio.

In the following we use classical capital structure determinants: size, asset structure, profitability, risk, growth.

2.2.1. Size

There are several theoretical reasons why firm size would be related to the capital structure. Smaller firms may find it relatively more costly to resolve informational asymmetries with lenders and financiers, which discourages the use of outside financing (Chung, 1993; Grinblatt and Titman, 1998) and should increase the preference of smaller firms for equity relative to debt (Rajan and Zingales, 1995). However, this problem may be mitigated with the use of short term debt (Titman & Wessels, 1988). Relative bankruptcy costs and probability of bankruptcy (larger firms are more diversified and fail less often) are an inverse function of firm size (Warner, 1977; Ang *et al.*, 1982; Pettit and Singer, 1985; Titman and Wessels, 1988). A further reason for smaller firms to have lower leverage ratios is that smaller firms are more likely to be liquidated when they are in financial distress (Ozkan, 1996).

2.2.2. Asset structure

The degree to which the firms' assets are tangible and generic should result in the firm having a greater liquidation value. By pledging the assets as collateral (Myers, 1977; Scott, 1977; Harris and Raviv, 1990) or arranging so that a fixed charge is directly placed to particular tangible assets of the firm, also reduces adverse selection and moral hazard costs (Long and Malitz, 1992). Bank financing will depend upon whether the lending can be secured by tangible assets (Storey, 1994; Berger and Udell, 1998). Tangible assets could also have a negative impact on financial leverage by augmenting risk through the increase of operating leverage (Hutchinson and Hunter, 1995).
Part of the intangible assets, such as reputation, becomes quasi-tangible and interpreted by debt holders as a guarantee (Balakrishnan and Fox, 1993).

Liquidity ratios may have a mixed impact on the capital structure decision. Companies with higher liquidity ratios might support a relatively higher debt ratio due to greater ability to meet short-term obligations. On the other hand firms with greater liquidities may use them to finance their investments. Therefore the companies' liquidities should exert a negative impact on its leverage ratio (Ozkan, 2001). Moreover the liquid assets can be used to show the extend to which these assets can be manipulated by shareholders at the expense of bondholders (Prowse, 1990).

2.2.3. Profitability

There are conflicting theoretical predictions on the effects of profitability on leverage. Following the POT, profitable firms, which have access to retained profits, can use these for firm financing rather than accessing outside sources. Jensen, 1986, predicts a positive relationship between profitability and financial leverage if the market for corporate control is effective because debt reduces the free cash flow generated by profitability. From the TOT

point of view more profitable firms are exposed to lower risks of bankruptcy and have greater incentive to employ debt to exploit interest tax shields.

2.2.4. Risk

Since higher variability in earnings indicates that the probability of bankruptcy increases, we can expect that firms with higher income variability have lower leverage (Bradley *et al.*, 1984; Kester, 1986; Titman and Wessels, 1988). Firms that have high operating risk can lower the volatility of the net profit by reducing the level of debt. A negative relation between operating risk and leverage is also expected from a POT perspective: firms with high volatility of results try to accumulate cash during good years, to avoid under-investment issues in the future.

2.2.5. Growth

Following TOT, for companies with growth opportunities, the use of debt is limited as in the case of bankruptcy, the value of growth opportunities will be close to zero, growth opportunities are particular case of intangible assets (Myers, 1984; Williamson, 1988 and Harris and Raviv, 1990). Firms with less growth prospects should use debt because it has a disciplinary role (Jensen, 1986; Stulz, 1990). Firms with growth opportunities may invest sub-optimally, and therefore creditors will be more reluctant to lend for long horizons. This problem can be solved by short-term financing (Titman and Wessels, 1988) or by convertible bonds (Jensen and Meckling, 1976; Smith and Warner, 1979).

Applying pecking order arguments, growing firms place a greater demand on the internally generated funds of the firm. Consequentially, firms with relatively high growth will tend to issue securities less subject to information asymmetries, i.e. shot-term debt. This should lead to firms with relatively higher growth having more leverage.

2.2.6. Non-debt tax shield

Non-debt tax shield like tax deduction for depreciation and investment tax credits are substitutes for the tax benefit of debt financing (DeAngelo and Masulis, 1980). Therefore, the tax advantage of leverage decreases when other tax deduction increases.

2.2.7. Age

Young firms tend to be externally financed while older tend to accumulate retained earnings so age must be negatively related to leverage (Petersen and Rajan, 1994).

2.2.8. Industry effect

Since asset risk, asset type, and requirement for external funds vary by industry we could expect average debt ratios to vary from industry to industry (Myers, 1984; Haris and Raviv, 1991). The sector characteristics (degree of concentration, barriers at the entry and the exit, technological changes) have an influence on the debt ratio ([2]).

[2] For example, see the debate between those who defend the existence of a positive correlation between competitive intensity and leverage (Brander & Lewis 1986, 1988; Maksimovic 1988) while others reach the

3. Empirical study

We use explanatory variables to proxy for the determinants of capital structure as presented in section 2.2.

3.1. Data, variables and methodology

All the data used in this study was gathered from the Plimsoll database on the period 2000-2003 (Plimsoll, 2005). The data utilised comprised the annual financial statements of French wines and spirits wholesalers. We have 419 companies with at least one year of complete data, for 410 of them this year is 2003. We have complete data for all the four years only for 303 companies.

We face the problem of choosing an appropriate leverage measure as the dependent variable. Following previous empirical works, we use five capital structure measures ([3]). The broader one is the ratio $\frac{Total\ Liabilities\ (Total\ Assets - Book\ equity)}{Total\ Assets}$ which is likely to overstate the financial leverage. However, for some firms (and especially in the wholesale sector) non-debt items are a very important part of the capital structure (Baker and Wurgler, 2002; Fama and French, 2002; Kayhan and Titman, 2007). We also use the more traditional measure of leverage $\frac{Long\ Term\ Debt + Short\ Term\ Debt}{Total\ Assets}$, and in order to shed some light over the difference between long and short term debt determinants we also consider the two following measure of leverage: $\frac{Long\ Term\ Debt}{Total\ Assets}$ $\frac{Short\ Term\ Debt}{Total\ Assets}$. Finally we compute the ratio $\frac{Long\ Term\ Debt}{Long\ Term\ Debt + Equity}$ which probably best represents the effects of past financial decision (Rajan and Zingales, 1995).

opposite (Poitevin 1989; Bolton & Scharfstein 1990; Dasgupta & Titman 1998). For an in depth analysis of industry dynamics on capital structure, see Miao, 2005.

[3] For a more exhaustive discussion of the different measures see Rajan and Zingales, 1995.

Table XXX Measures of capital structure determinants		
Determinants	measures	Some references
Size	$Ln(Total\ Sales)$ $Ln(Total\ Assets)$	Homaifar *et al.,* 1994; Rajan & Zingales, 1995; Michaleas *et al.,* 1999; Booth *et al.,* 2001; Ozkan, 2001; Sogorb Mira, 2002; Cassar & Holmes, 2003; Panno, 2003; Deesomsak 2004; Akhtar, 2005; Fattouh *et al.,* 2005; Gaud *et al.*, 2005; Song, 2005
Asset structure (Tangibility)	$\frac{Fixed\ Assets + Stock}{Total\ Assets}$ ([4])	Titman & Wessels 1988; Gaud *et al.*, 2005;
Asset structure (Liquidity)	$\frac{Cash}{Total\ Assets}$	Titman & Wessels, 1988; Panno, 2003; Akhtar 2005
Profitability	$\frac{EBITDA}{Total\ Assets}$ $\frac{EBIT}{Total\ Assets}$	Titman & Wessels, 1988; Hutchinson & Hunter, 1995; Rajan & Zingales, 1995; Michaleas *et al.,* 1999; Booth *et al.,* 2001; Ozkan, 2001; Sogorb Mira, 2002; Cassar & Holmes, 2003; Deesomsak, 2004; Voulgaris *et al.*, 2004; Fattouh *et al.,* 2005; Gaud *et al.,* 2005; Song, 2005
Risk (volatility)	σ(EBITDA) – mean(EBITDA) $\frac{\sigma(EBITDA)}{Total\ Assets}$ σ : Standard deviation	Bradley *et al.,* 1984; Lee & Kwok, 1988; Titman & Wessels, 1988; Homaifar *et al.,* 1994; Michaleas *et al.,* 1999; Ghosh *et al.,* 2000; Booth *et al.,* 2001; Miguel, & Pintado, 2001; Cassar & Holmes, 2003; Deesomsak, 2004; Gaud *et al.*, 2005; Song, 2005
Risk (asset turnover)	$\frac{Total\ Sales}{Total\ Assets}$	O'Brien & Vanderheiden, 1987; Hutchinson & Hunter, 1995
Growth	Mean(growth of assets), mean(growth total sales) (three years : 2000-2003)	Mehran, 1992; Jensen, Donald & Thomas, 1992; Mehran, 1992; Michaleas *et al.,* 1999; Ghosh *et al.,* 2000; Cassar & Holmes, 2003; Akhtar, 2005; Fattouh *et al.,* 2005; Song, 2005
Non-debt tax shield	$\frac{Depreciation}{Total\ Assets}$	De Angelo & Masulis, 1980; Bradley *et al.,* 1984; Titman & Wessels, 1988 ; Barton *et al.,* 1989; Homaifar *et al.,* 1994; Ozkan, 2001; Sogorb Mira, 2002; Deesomsak, 2004; Akhtar, 2005; Fattouh *et al.,* 2005
Age	2003-date of birth	Petersen & Rajan, 1994; Michaleas *et al.*, 1999,

[4] Adding inventories to the tangible assets is motivated by the fact that inventories can be very important in the wine industry so debts are used partly to finance inventories, and in most case inventories maintain some value when firm is liquidated.

Dummy variables are defined in an attempt to identify reputational assets. The dummy used distinguishes between companies on the basis of whether they declare their market to be "local or regional", "national" and "international" (Hutchinson & Hunter, 1995).
Dummy variables are also used to take into account a potential sub-sectoral effect (Harris & Raviv, 1991; Michaelas *et al.,* 1999; Akhtar, 2005).
In an attempt to determine if legal structure and the associated differences in governance have an impact on leverage, we use a dummy variable to distinguish between cooperatives and other legal structures.

As for methodology, we have used the ordinary least square equations and the stepwise method ([5]) because we have different proxies for the same determinant and we want to keep only the most significant independent variables.

3.2. Results

To used the largest sample as possible we conduct two different empirical studies, the first one with only year 2003 for which we have the largest number of companies with complete data, the second one with all the companies with complete data for all the four years. So in the first studies we eliminate the measures of risk (volatility) and the measures of growth.

Table XXX Descriptive statistics of dependent variables

	$\left(\frac{LTD}{LTD+E}\right)_{03}$	$\left(\frac{LTD}{Tot.Assets}\right)_{03}$	$\left(\frac{LTD+STD}{\text{Tot. Assets}}\right)_{03}$	$\left(\frac{Tot.Liab.}{Tot.Assets}\right)_{03}$	$\left(\frac{STD}{Tot.Assets}\right)_{03}$
Mean	0.3257	0.1884	0.2474	0.6497	0.059
Standard deviation	0.2625	0.1916	0.2034	0.20815	0.1049

[5] *Nota Bene*: stepwise regression is the most conservative with respect to the criteria for retaining variables in the equation.

Table XXX Regression results (2003 only)

Dependent variable: $\left(\frac{LTD}{LTD+E}\right)_{2003}$

Number of observations: 410

Method: stepwise regression

Variables	coefficient	t	signification	VIF ([6])
Profitability	-0.865	-4.967	0.000	1.123
Cash	-0.304	-3.489	0.001	1.123
Asset turnover	-0.037	-3.056	0.002	1
constant	0.482	18.926	0.000	
R square: 0.137 Adjusted R square: 0.131				

Table XXX Regression results (2003 only)

Dependent variable: $\left(\frac{LTD}{Total\ Assets}\right)_{2003}$

Number of observations: 410

Method: stepwise regression

Variables	Coefficient	T	signification	VIF
Profitability	-0.461	-3.732	0.000	1.125
Cash	-0.159	-2.129	0.034	1.643
Tangibility	0.089	1.650	0.100	1.81
Asset turnover	-0.049	-5.068	0.000	1.301
Non-debt tax shield	1.21	2.458	0.014	1.008
constant	0.241	5.312	0.000	
R square: 0.191 Adjusted R square: 0.181				

Table XXX Regression results (2003 only)

Dependent variable: $\left(\frac{LTD+STD}{\text{Total Assets}}\right)_{2003}$

Number of observations: 410

Method: stepwise regression

Variables	coefficient	t	signification	VIF
Profitability	-0.615	-4.784	0.000	1.124
Cash	-0.178	-2.292	0.022	1.643
Tangibility	0.135	2.407	0.017	1.808
Asset turnover	-0.047	-4.667	0.000	1.294
constant	0.312	6.736	0.000	
R square: 0.219 Adjusted R square: 0.211				

[6] VIF: Variance Inflation Factor, the higher the VIF, the greater the collinearity of the variable with other predictor variables.

Table XXX Regression results (2003 only)

Dependent variable: $\left(\frac{Total\ Liab.}{Total\ Assets}\right)_{2003}$

Number of observations: 410

Method: stepwise regression

Variables	Coefficient	T	signification	VIF
Profitability	-0.978	-4.433	0.000	1.002
Asset turnover	0.059	6.447	0.000	1.029
age	-0.001	-3.058	0.002	1.032
Non-debt tax shield	-1.283	-2.459	0.014	1.014
constant	0.692	29.614	0.000	
R square: 0.233 Adjusted R square: 0.225				

Table XXX Regression results (2003 only)

Dependent variable: $\left(\frac{STD}{Total\ Assets}\right)_{2003}$

Number of observations: 410

Method: stepwise regression

Variables	coefficient	T	signification	VIF
Profitability	-0.164	-2.343	0.020	1.025
Tangibility	0.048	2.001	0.046	1.024
Non-debt tax shield	-0.907	-3.118	0.002	1.001
constant	0.064	4.115	0.000	
R square: 0.047 Adjusted R square: 0.04				

Specific determinants

We use each model obtained by stepwise regression and add dummy variables to take into account nonmetric variables.

Cooperative:

Descriptive statistics:

Table XXX Cooperative			
Coopératives	19.1 %	Other property structures	80.9 %

- no statistically significant negative difference for long term or total debt,
- short term debt ratio is lower (coefficient: -0.042, t = -3.103, p = 0.002)

Industry

Industry sub-sectors (% of sample ([7]))	Dependent variable	difference	significant	t	p
Wholesale of drinks (52.3 %)	LTD/Total Assets,	0	No		
	(LTD+STD)/Total Assets	0	No		
	Total Liab./Total Assets	0.054	Yes	2.715	0.007
	STD/Total Assets	0.028	Yes	2.599	0.01
Champagnization (14.3 %)	LTD/Total Assets,	0.071	Yes	2.631	0.009
	(LTD+STD)/Total Assets	0.082	Yes	2.917	0.004
	Total Liab./Total Assets	0.008	No		
	STD/Total Assets	-0.024	No		
Wine making (16 %)	LTD/Total Assets,	0.05	Yes	1.978	0.049
	(LTD+STD)/Total Assets	0.032	No		
	Total Liab./Total Assets	0.025	No		
	STD/Total Assets	-0.017	No		
Wine growing (3.8 %)	LTD/Total Assets,	-0.018	No		
	(LTD+STD)/Total Assets	-0.057	No		
	Total Liab./Total Assets	-0.073	No		
	STD/Total Assets	-0.039	No		
Spirits and brandies (9.8 %)	LTD/Total Assets,	-0.054	Yes	-1.836	0.067
	(LTD+STD)/Total Assets	-0.058	Yes	-1.9	0.058
	Total Liab./Total Assets	-11.4	Yes	-3.685	0.000
	STD/Total Assets	-0.017	No		

Reputational effect

Market (% of sample)	Dependent variable	difference	significant	t	p
Local or regional (21.2 %)	LTD/Total Assets,	0.048	Yes	2.137	0.033
	(LTD+STD)/Total Assets	0.052	Yes	2.326	0.02
	Total Liab./Total Assets	-0.016	No		
	STD/Total Assets	0.000	No		
National (32.2%)	LTD/Total Assets,	-0.018	No		
	(LTD+STD)/Total Assets	-0.031	No		
	Total Liab./Total Assets	0.004	No		
	STD/Total Assets	-0.008	No		
International (46.5%)	LTD/Total Assets,	-0.016	No		
	(LTD+STD)/Total Assets	-0.009	No		
	Total Liab./Total Assets	0.008	No		
	STD/Total Assets	0.008	No		

B) Growth and risk

[7] 3.8 % are missing corresponding to other sectors.

Table XXX Descriptive statistics of dependent variables					
	$\left(\frac{LTD}{LTD+E}\right)_{03}$	$\left(\frac{LTD}{Tot.Assets}\right)_{03}$	$\left(\frac{LTD+STD}{\text{Tot. Assets}}\right)_{03}$	$\left(\frac{Tot.Liab.}{Tot.Assets}\right)_{03}$	$\left(\frac{STD}{Tot.Assets}\right)_{03}$
Mean	0.3061	0.1636	0.2295	0.6539	0.066
Standard deviation	0.2611	0.1717	0.1923	0.2132	0.109

Table XXX Regression results

Dependent variable: $\left(\frac{LTD}{LTD+E}\right)_{2003}$

Number of observations: 303

Method: stepwise regression

Variables	coefficient	t	signification	VIF
Profitability	-0.836	-5.033	0.000	1.171
Cash	-0.351	-3.690	0.000	1.048
Asset turnover	-0.045	-3.123	0.002	1.009
Growth in sale	*0.06*	*2.798*	*0.005*	*1.130*
Constant	0.493	15.508	0.000	
R square: 0.166 Adjusted R square: 0.155				

Table XXX Regression results

Dependent variable: $\left(\frac{LTD}{Total\ Assets}\right)_{2003}$

Number of observations: 303

Method: stepwise regression

Variables	Coefficient	T	signification	VIF
Profitability	-0.407	-3.808	0.000	1.171
Cash	-0.236	-3.855	0.000	1.048
Asset turnover	-0.056	-6.078	0.000	1.009
Growth in sale	*0.032*	*2.348*	*0.020*	*1.130*
constant	0.317	15.469	0.000	
R square: 0.202 Adjusted R square: 0.191				

Table XXX Regression results

Dependent variable: $\left(\frac{LTD+STD}{\text{Total Assets}}\right)_{2003}$

Number of observations: 303

Method: stepwise regression

Variables	coefficient	t	signification	VIF
Profitability	-0.676	-5.330	0.000	1.422
Cash	-0.288	-4.330	0.000	1.066
Asset turnover	-0.067	-6.721	0.000	1.009
Growth in assets	*0.022*	*2.390*	*0.017*	*1.377*
constant	0.429	19.436	0.000	
R square: 0.262 Adjusted R square: 0.252				

Table XXX Regression results

Dependent variable: $\left(\frac{Total\ Liab.}{Total\ Assets}\right)_{2003}$

Number of observations: 303

Method: stepwise regression

Variables	Coefficient	T	signification	VIF
Profitability	-0.998	-8.079	0.000	1.136
Asset turnover	0.07	5.666	0.000	1.309
Tangibility	0.114	2.135	0.034	1.296
Age	-0.001	-2.933	0.004	1.043
Growth in sale	*0.057*	*3.507*	*0.001*	*1.133*
constant	0.602	13.814	0.000	
R square: 0.290 Adjusted R square: 0.278				

Table XXX Regression results

Dependent variable: $\left(\frac{STD}{Total\ Assets}\right)_{2003}$

Number of observations: 303

Method: stepwise regression

Variables	coefficient	T	signification	VIF
Profitability	-0.191	-2.809	0.005	1.006
Tangibility	0.065	2.352	0.019	1.007
Non-debt tax shield	-0.72	-2.035	0.043	1.002
constant	0.063	3.588	0.000	
R square: 0.06 Adjusted R square: 0.051				

Industry sub-sector (% of sample ([8]))	Dependent variable	difference	significant	t	p
Wholesale of drinks (62.9 %)	LTD/Total Assets,	0	No		
	(LTD+STD)/Total Assets	0.017	No		
	Total Liab./Total Assets	0.054	Yes	2.357	0.019
	STD/Total Assets	0.016	No		
Champagnization (11.4 %)	LTD/Total Assets,	0.091	Yes	3.041	0.003
	(LTD+STD)/Total Assets	0.08	Yes	2.471	0.014
	Total Liab./Total Assets	0.005	No		
	STD/Total Assets	-0.034	No	-1.632	0.104
Wine making (5.5 %)	LTD/Total Assets,	0.006	No		
	(LTD+STD)/Total Assets	0.037	No		
	Total Liab./Total Assets	0.064	No		
	STD/Total Assets	0.034	No		
Spirits and brandies (10.7 %)	LTD/Total Assets,	-0.033	No		
	(LTD+STD)/Total Assets	-0.057	Yes	-1.808	0.072
	Total Liab./Total Assets	-0.082	Yes	-2.420	0.016
	STD/Total Assets	-0.015	No		

Market (% of sample)	Dependent variable	difference	significant	t	p
Local or regional (16 %)	LTD/Total Assets,	0.043	Yes	1.689	0.092
	(LTD+STD)/Total Assets	0.052	Yes	1.928	0.055
	Total Liab./Total Assets	-0.026	No		
	STD/Total Assets	0.016	No		
National (32.6%)	LTD/Total Assets,	-0.03	No		
	(LTD+STD)/Total Assets	-0.043	Yes	-2.043	0.042
	Total Debt/Total Assets	-0.012	No		
	STD/Total Assets	-0.011	No		
International (51.5%)	LTD/Total Assets,	0.004	No		
	(LTD+STD)/Total Assets	0.011	No		
	Total Liab./Total Assets	0.028	No		
	STD/Total Assets	0.003	No		

[8] 3.8 % are missing corresponding to other sectors.

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