

structure decision. The workers and suppliers of these firms which are producing relatively unique products have high level of job specific skills and capital so they suffer high cost in the event that they liquidate. For these causes individuality has expected to be inversely connected with leverage.

In case of Pakistan there is no paper which analyzes uniqueness as determinants of capital structure due to limitation of data. But for food industry selling expense data for recent years are available.

3.2.8 RISK:

Business risk can be measured variation in income. Mackie-Mason (1990) argued that if variation in income is high it means that the likelihood of bankruptcy increases. So it is expected that firms with high income variability have low leverage ratio. Mackie-Mason (1990)

3.2.9 GROWTH:

Pecking order theory assumes positive relationship between leverage and growth. Theory suggests that the requirement of high capital by growing firms cannot be meet through internal funds only so companies' external borrowing which creates the results in level of leverage. On the other hand, Myers (1977) argues that high growth firms may have more future investment opportunities but with outstanding debt, firms' have to sacrifice some of these future options for the reason that such an investment relocates wealth to debt holders by stockholders. So high growth firms may not prefers to issue debt, hence negative relationship is expected between leverage and growth.

3.3 METHODS AND MODEL:

This study uses balanced panel data relate to firms over time, which allows the unobservable heterogeneity to be eliminated and multicollinearity to be alleviated. The trouble that may be occurs in the regression model like heteroskedasticity, multicollinearity, etc. These problems may cause inconsistency of the OLS estimators.

As can be seen in table 2 most cross-correlation between stimulus are small, indicating less causes of presence of multicollinearity situation. Moreover,

The basic model is as follow:

$$Y_{it} = \alpha + X'_{it}\beta + \varepsilon_{it} \quad (1)$$

Y_{it} is dependent variable leverage for the i th firm over at the time t , α is intercept, X'_{it} is set of regressors for the each individual firm in the t th time period, β is a parameter for explanatory variables and ε_{it} is the disturbance term equals to $\mu_{it} + v_{it}$, where μ_{it} is the firm specific error component and v_{it} is the combined time series and cross section (firms) error component.

This study utilizes three estimations i.e. pooled OLS, fixed effect and random effect. The Breusch-Pagan test results 63.3 (p -value 0.0000) indicates that variances among covariates are not constant. Hence pooled OLS is rejected.

Fixed effects model assumes that error term and the independent variables are correlated, whereas random effects model assumes that error term and independent variables are uncorrelated. The Hausman specification test is applied to test the fixed effect versus random effect model. The test result is statistically significant. Thus, random effect is rejected in favor of fixed effect. The regression model is specified as follow:

$$LVG_{it} = \beta_1 + \beta_2 PROF + \beta_3 TANG + \beta_4 SIZ + \beta_5 GRO + \beta_6 TAX + \beta_7 NDT + \beta_8 RIS + \beta_9 UNI + \beta_{10} LIQ + \mu_{it} \quad (2)$$

Where β_1 = intercept; $\beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9, \beta_{10}$ = slope coefficients

μ_{it} = residual term; i = cross sectional unit; t = time period

LVG= leverage; PROF= profitability; TANG= tangibility; SIZ= size; GRO=growth; TAX= tax;

NDT= non-debt tax shield; RIS= risk; UNI= uniqueness; LIQ= liquidity

3.4 RESEARCH QUESTION AND HYPOTHESIS:

The research question will be answer from this study will be:

Do the factors that affect cross-sectional variability of capital structure in other countries have similar effects on Pakistani food, beverages and tobacco firms' capital structure?

Hypotheses to be tested:

Hypothesis v1: *Profitability and leverage are inversely related.*

Hypothesis v2: *Tangibility and leverage are positively related.*

Hypothesis v3: *Size and leverage have positive relationship.*

Hypothesis v4: *Growth is inversely related to leverage.*

Hypothesis v5: *Taxes have positive effects on leverage.*

Hypothesis v6: *Non-debt tax shield has negative effect on leverage.*

Hypothesis v7: *Risk is negatively relate with leverage.*

Hypothesis v8: *Uniqueness and leverage have inverse relationship.*

Hypothesis v9: *Liquidity has negatively related with leverage*

3.5 FINDINGS:

Table 4 represents the regression results for leverage. Table reports results for both fixed effect as well as random effect. If we compare the results of fixed effect and random effect, almost same conclusion is seen on the basis of significance of parameters. R-squared value is 0.94 indicating that 94% of variation in dependent variable is explained by independent variables used. The profitability, tangibility, non-debt tax shield, uniqueness and growth appear to be statistically significant while, size, taxes, liquidity and risk are statistically insignificant.

The result shows positive significant relationship between profitability and leverage. This positive relationship is supported by trade-off theory. The theory argues that high profitability is associated with improved good will of the firm, decrease agency and information asymmetric cost and free cash flows. Hence, firm's ability to pay back loans increases. The tangibility coefficient for leverage is positive and different from zero that means higher tangibility is linked with higher leverage. This relationship is maintained by trade-off theory and the argument is obvious that tangible assets serve as collaterals. Hence it is a source of security for lenders. Tangible assets as collaterals normally reduce lender's risk so

associated with high leverage ratio. The third significant variable is non-debt tax shield. Relationship is negative as expected. The argument is that existence of non-debt tax shield minimizes the firm's debt tax benefits which negatively affect the firm's debt level. So firms with high non-debt tax shield will have low level of leverage. The coefficient of growth found to be positive and statistically significant. Pecking order theory supports this relationship as growing firms requires high capital so they need more debt to finance their operations resulting in high leverage ratio. The last significant coefficient found in this study is of uniqueness. Negative relationship between uniqueness and leverage has been found. The firms having unique assets have low expected value of recovery by a lender if it bankrupts.

4. CONCLUSION:

In the last five decades there has been significant theoretical and empirical prominence given to capital structure determinants as they apply to corporate finance. This study attempts to empirically investigate the potential determinants of capital structure for food, beverages and tobacco firms of Pakistan. Previous empirical studies have shown that determinants of capital structure are more industry specific. So this study undertakes food industry to explore as it is the one of the important industry of Pakistan. The motivation for this study is that food, beverages and tobacco industry weights 12.37% of large scale manufacturing industry of Pakistan, grows 7.30% in 2012-13. As restaurants and fast food chains are prosperous in the country. The demand for dairy products, processed food and beverages has increased sharply thus brought positive impact on food group. Hence, optimal capital structure is required to make this industry grow and prosper which depends on its determinants.

This study empirically find positive and significantly from zero association between profitability, tangibility and growth as well as inverse connection of non-debt tax shield and uniqueness with leverage. Size, taxes, liquidity and risk found to be unrelated with leverage in case of food industry of Pakistan. The relationship between profitability, tangibility and leverage is consistent with trade-off theory and relationship between growth and leverage is consistent with pecking order theory.

On the basis of this study more detailed evaluation addressing determinants of capital structure of food industry of Pakistan can be done as it provides some underpinning. Moreover, corporate managers can get help from its empirical finding in order to make optimal capital structure decision.

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TABLE 1: Summary of determinants of capital structure, their operational definitions, theoretical predicted signs and empirical evidences

proxy	operational definitions	theoretical predicted signs	empirical evidences
Profitability	Profit before tax/ total sales	Positive/ Negative	Positive: Kester (1986), Titman and Wessel (1988), Rajan and Zingales (1995), Ahmad et al. (2011)*
			Negative: Lang and Malitz (1986), Baskin (1989), Dobers and fix (2003), Shah and Hijazi (2004)*, Shah and Khan (2007)*, Walliulah and Nishat (2008)*
Firm size	Natural log of sales	Positive/Negative	Positive: Myers and Majluf (1984), Titman and Wessel (1988), Honaifer et al. (1994), Shah and Hijazi (2004)*, Jong (2007)
			Negative: Ferri and Jones (1979), Kim and Sorensen (1986), Chung (1993), Mazur (2007), Shah and Khan (2007)* Chakraborty (2010), Ahmad et al. (2011)*
Tangibility	Fixed assets/ total assets	Positive	Positive: Scott (1977), Titman and Wessel (1988), Shah and Hijazi (2004)*, Walliulah and Nishat (2008)*, Chakraborty (2010), Ahmad et al. (2011)*

Non debt tax shield	Depreciation/ total assets	Negative	Positive: Shahjahanpur et al. (2010), Chakraborty (2010)
			Negative: Bowen et al. (1982), Kim and Sorensen (1986), Huang and Song (2006)
Taxes	Total tax/ earning before tax	Positive	Positive: Mackie (1990), Huang and Song(2006), Jong (2007)
Liquidity	Current assets/ current liabilities	Negative	Negative: Mazur (2007), Shahjahanpur et al.(2010), Ahmad et al. (2011)*
Uniqueness	Selling expense/sales	Negative	Negative: Harris and Raviv (1991), Chang et al. (2005)
Risk	Deviation from mean of net profit/total no. of years	Negative	Negative: Bradley et al. (1984), Mackie and mason (1990), Wald (1999), Delcuore (2005), Sheikh and Wang (2011)*
Growth	Percentage change in total sales	Positive/Negative	Positive: Marsh (1982), Cassar and Holmes (2003)
			Negative: Shah and Hijazi (2004)*, Hijazi and Tariq (2006)*, Jong (2007), Walliulah and Nishat (2008)*

“**” represent studies in the context of Pakistan



TABLE 2: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
lev	108	.7399968	.9245353	.1290907	9.133517
prof	108	.1462007	.7219369	-3.474686	6.413451
size	108	14.40487	2.404995	0	17.98719
tang	108	.7783922	.8033977	.1837818	7.436285
ndts	108	.0378748	.0326128	.0003353	.2043483
tax	108	.3117252	.4579427	-.5675564	4.438166
liq	108	1.172448	.6953283	.0243997	4.265984
uniq	108	.0517415	.0863748	0	.5854664
risk	108	-.0061728	107357.3	-381613.5	440255.2
gro	108	25.43333	37.69856	-70	264

TABLE 3: Correlation matrix

	lev	Prof	siz	tang	ndts	tax	liq	uniq	risk	gro
Lev	1.0000									
prof	0.0091	1.0000								
Siz	-0.3405	-0.1231	1.0000							
Tang	0.9098	-0.0060	-0.3209	1.0000						
Ndts	-0.1245	-0.0398	0.1995	0.0384	1.0000					
Tax	-0.0517	-0.0720	0.1007	-0.1161	-0.1129	1.0000				
Liq	-0.3397	-0.1516	0.1656	-0.2989	-0.1384	0.1260	1.0000			
uniq	0.2170	-0.0194	0.0567	0.1742	-0.0687	-0.0298	-0.0425	1.0000		
Risk	-0.0249	0.0487	0.0514	-0.0416	-0.0742	-0.0034	0.0172	0.1562	1.0000	
Gro	0.3710	0.1037	-0.2028	0.2289	-0.2798	-0.0933	-0.0602	0.1529	0.0400	1.0000



Table 4: Regression results

	Pooled OLS	Fixed effect	Random effect
prof	-.0202511 (.0457193)	.0546187** (.0284788)	.0283129 (.0337751)
siz	-.0032453 (.0148947)	.0163973 (.0153425)	.0083583 (.0147192)
tang	.9786217 (.0457742)	1.093013* (.0313536)	1.059883 (.0360402)
ndts	-3.497616 (1.079786)	-3.017519* (1.208509)	-3.32473 (1.100149)
tax	.1199251 (.0719691)	.0622662 (.0489202)	.0805934 (.0566976)

liq	-.1345389 (.0498283)	-.0204586 (.0497223)	-.075084 (.0487832)
uniq	.410136 (.3896026)	-.5564212** (.2646102)	-.2602471 (.3031575)
risk	-5.99e-08 (3.05e-07)	7.22e-08 (1.82e-07)	3.16e-08 (2.19e-07)
gro	.0033242 (.0009328)	.0015475** (.0007343)	.0022875 (.0007937)
_cons	.1750151 (.2328118)	-.2466855 (.2391995)	-.0654286 (.2317129)
R square	.8819	.9435	.9402

Standard errors are in parenthesis. *significant at 1%, ** significant at 5%, ***significant at 10%

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