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Empirical Identification of Determinants of Firm's Financial Performance: a Comparative Study on Textile and Food Sector of Pakistan

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Abstract

The current research empirically identifies the factors significantly affecting the firm's performance in textile and food sector of Pakistan. The researcher used panel/longitudinal data set which are created with the help of State Bank of Pakistan's annual publication named as "Financial statement analysis of companies (non-financial) listed in KSE for the period 2005 to 2010 which is available at www.sbp.org.pk online. The researcher used one-way fixed effect model due to the presence of cross-sectional fixed effect in the regression results. The dependent variable was profitability as a measure of firm's financial performance while the independent variables were leverage, growth, firm's size, risk, tax, tangibility, liquidity and non-debt tax shield. The firm's performance in case of textile sector is significantly affected by Short term leverage, Size, risk, tax and non-debt tax shield while taking long term leverage as first independent variable, the leverage becomes insignificant along with tax factor. In food sector, Long term leverage, size, risk, tangibility and non-debt tax shield are the factors significantly affecting the firm's financial performance. The textile and food sector should consider the above said factors because these factors significantly increasing or decreasing firm's financial performance. The findings of the current research are limited and applicable to non-financial sector of Pakistan only. It is not applicable to financial sector due to their difference of capital structure. In addition, the researcher used profitability as measure of firm's financial performance while the future research can have ROA, ROE, and EPS etc as firm's financial performance.

Keywords: Firm's performance, Textile sector, Food sector

1. Introduction

The companies in Textile sector and also in Food sector represent a large number of non-financial industries in Pakistan. Their Performance can also influence the other sector's financial decision making process. The previous studies conducted on firm's performance indicates that a large number of factors affect significantly the firm's performance. David Durand (1952) presented different theories for starting the argument on firm's value. He was of the view that increasing leverage can increase firm's performance but he could not provide the operational justification to validate his point of view. The study conducted by Modigliani and Miller (1958) reveals that levered and unleveraged firm's can be made equal in value by applying the arbitrage process. Modigliani and Miller (1963) also found that debt provide the tax shield advantage in the form of interest. A lot of studies afterwards reveal that corporate financial performance or firm's performance influenced by a number of factors that should keep in mind while making financial decision to increase a firm's performance. The researcher used the framework of (Zeitun and Tian, 1997). They used leverage, growth, size, tax, risk and tangibility to see their effect on corporate performance of Jordan non-financial sector. The researcher extended the regression model by including liquidity and non-debt tax shield (depreciation) to make this study more comprehensive.

1.1 Significance of the Study

The companies in textile sector and in food sector cover a larger part of population of

non-financial industry of Pakistan. Both of these sectors can influence the performance of other sectors by their financial decision making and actions thereof. By comparing their financial performance through profitability and identifying the factors affecting it, the researcher can explore the ways by which firm's performance can be groomed in overall non-financial sector of Pakistan.

1.2 Objective of the Study

The researcher's objective is to find out the different factors which are significantly affecting firm's performance in textile and food sector of Pakistan for the period 2005-2010.

1.3 Research Questions

The researcher wants to explore the current study with reference to the following researcher questions:

1. What factors are significantly impacting the firm's performance in textile industry of Pakistan?
2. What factors are significantly impacting the firm's performance in food industry of Pakistan?

2. Literature Review

A large number of previous studies relating to firm's performance or sometimes corporate performance has identified a number of factors that empirically and even significantly affecting the firm's performance. There are a little number of research findings available in Pakistani context relating to firm's performance however the foreign researchers has done a lot in this context. The researcher used the framework of Zeitun and Tian (2007) with the extension in their regression model by adding liquidity and non-debt tax shield and applied this regression model simultaneously on textile and food sectors of Pakistan. The findings of Zeitun and Tian (2007) indicated that leverage has a significant and negative relationship with firm's performance. They used leverage, growth, size, tax, risk and tangibility as independent variable to see their effect on firm's performance. They concluded that firm's size and tax have positive and significant relationship with firm's performance while risk and tangibility have negative and significant relationship with firm's performance. Memon, Bhutto and Abbas (2010) concluded in their study of capital structure and firm's performance on textile sector that the companies in this sector are performance below optimum level of capital structure and also fail to achieve the economies of scale. Nosa and Ose (2010) found that effective funding required for the growth and development of the corporations in Nigeria. They suggested enhancing the regulatory framework for increasing the firm's performance by focusing on risk management and corporate governance. Onaolapo and Kajola (2010) found a significant and negative relationship between debt ratio and firm's financial performance. The study conducted by Krishnan and Moyer (1997) found a negative and significant relationship between leverage and firm's performance while other factors affecting firm's performance positively includes size, growth, tax and risk. Jensen and Meckling (1976) found two types of agency cost; agency cost of equity holders and agency cost of debt holders. They concluded that a conflict of interest arises between the management and the shareholders when management take decision against

the interest of shareholders and another conflict arises when the shareholder act against the interest of debt holders. William (1987) found that decision for high leverage by the management decreases the conflict between management and shareholders. The leverage can work as disciplinary device that controls the management from wasting their firm's resources according to (Grossman and Hart, 1982). The researcher in the current study used short term as well as long term debts as proxy for leverage and also the other factors like growth, size, tax, risk, tangibility, liquidity and non-debt tax shield for measuring their impact on firm's financial performance in textile as well as food sector comparatively for the period 2005-2010.

3. Data and Methodology

3.1 Data and Source

The type of data is panel/longitudinal and has been created from the State Bank of Pakistan's annual publication "Financial Statement Analysis of companies (non-financial) listed in Karachi Stock Exchange for the period 2005-2010". This statement contains the 6 years financial figures of 12 different sectors relating to non-financial industry having 411 firms in total and available online at www.sbp.org.pk while the researcher selected the 2 sectors like Textile and Food sector for comparison as both sector covers the greatest part of overall population of non-financial industry in Pakistan.

The sample consists of 139 companies from textile sector and 39 companies from food sector of Pakistan. The findings of the current study is applicable on all sectors of non-financial industry of Pakistan as the sample selected covers 44% approximately of the whole population of non-financial industry.

It is not applicable on financial industry like banks and insurance sector as their capital structure is entirely different from non-financial sector.

3.2 Econometric Regression Model

For regression analysis of Panel data, there are three methods available for their regression like fixed effect, Random effect and constant coefficient regression model. The choice between fixed effect and random effect is finalized by hausman specification test (1978) while the choice between random effect and constant coefficient model is finalized by Lagrange multiplier test. As there is a large number of companies in the current study while the time period is small so the data type is short panel according to (Baltagi, 2005). The researcher expects a cross sectional fixed effect with constant in the current study and developed the following regression model for the estimation of current study:

$$(FP)_{it} = (\beta_0+u_i) + \beta 1(LV)_{it} + \beta 2(GR)_{it} + \beta 3(SZ)_{it} + \beta 4(RK)_{it} + \beta 5(TX)_{it} + \beta 6(TN)_{it} + \beta 7(LQ)_{it} + \beta 8(ND)_{it} + V_{it}$$

Where

FP = Firm's Performance (ROI)

β_0+u_i = Constant coefficient including cross sectional fixed effect

$\beta_1 - \beta_8$ = Regression coefficients for measuring independent variables

LV = Leverage

GR = Growth
SZ = Size
RK = Risk
TX = Tax
TN = Tangibility
LQ = Liquidity
ND = Non-debt Tax shield
V_{it} = Error component showing unobserved factor

3.3 Variables and Hypothesis Development

The previous studies have shown a number of proxies for measuring firm's financial performance like ROA, ROE, Tobin's Q, EPS and ROI. Some of these variable required current market data like Tobin's Q. The researcher in the current study used Return on asset (ROI) as dependent variable for measuring firm's financial performance while the independent variables includes short term and long term leverage, growth, firm's size, risk, tax, tangibility of fixed assets, liquidity and non-debt tax shield (depreciation).

The description of each variable and their expected signs are given below in the following table:

Table 1. Explanation of Dependent and Independent variables and Expected signs

Dependent Variable		
Return on assets	EBIT/Total Assets	
Independent Variables		
Variables Names	Description	Expected Signs
Leverage	Short term debt/Total assets, Long term debt/Total Assets	Negative
Growth	Δ Total Assets/ Total Assets	Positive
Size	Natural Log of Total Sales	Positive
Risk	EBIT/Earning after interest and Tax	Positive
Tax	Current year's Tax/Earnings before Tax	Positive
Tangibility	Fixed Assets/Total Assets	Positive
Liquidity	Current Assets/Current Liabilities	Positive
NDTS	EBIT + Depreciation/Total Assets	Positive

On the basis of above table the relationships between dependent and independent variables have been developed in the following hypothesis:

H_1: Leverage (short & long term) should have a negative impact on firm's performance.

H_2: Growth should have a positive impact on firm's performance.

H_3: Firm's size should have a positive impact on firm's performance.

H_4: There should be a positive relationship between risk and firm's performance.

H_5: There should be a positive relationship between tax and firm's performance

H_6: Tangibility should have a positive relationship with firm's performance.

H_7: Liquidity should have a positive relationship with firm's performance.

H_8: There is a positive relationship between Non-debt tax shield and firm's performance.

4. Regression Analysis and Discussion on Findings

The researcher used STATA 11 software for the regression analysis of the current study. The dependent variable is firm's performance measure ROI while the independent variables includes Leverage (short, long), Growth, Size, Risk, Tax, Tangibility, Liquidity and Non-debt tax shield. The combine descriptive statistics showing mean, standard deviation, minimum and maximum values of both textile and food sector are indicated in table 4.1 while correlation matrix of textile sector is indicated in table 4.2 (a) and of food sector is indicated in table 4.2 (b). The regression result of both sectors by using one-way fixed effect model is indicated in table 4.3. The presence of fixed cross sectional effect is evidenced by the significant results of hausman test which validate the name of this model as one way-fixed effect model according to (Baltagi, 2005).

Table 2. Descriptive Statistics

Variables	Textile Sector				Food Sector			
	Mean	SD	Min	Max	Mean	SD	Min	Max
FP	.0231793	.1554565	-1.71287	1.736175	.0895812	.2454644	-1.9607	1.5366
S-LV	.5139861	.2567038	.0085605	2.546073	.9987258	2.308849	0	21.0027
L-LV	.2236888	.2091147	0	1.730722	.3420604	.956483	0	8.2593
GR	.0337597	.2263425	-2.86857	.9645731	.0545845	.3791248	-3.1423	.869221
SZ	13.88058	1.417079	7.34601	17.26663	14.2658	1.374033	9.43284	17.7569
RK	1.388222	4.136975	-42.9379	73.95914	1.143094	1.292506	-3.4124	16.1192
TX	.8204285	13.75174	-58.7819	381.2666	.1621389	.6174747	-1.2676	6.9061
TN	.9245616	.4761682	0	5.93239	1.018567	.7769611	0	8.1421
LQ	1.045564	1.070488	.04	10.55	.9958023	.7317717	0	4.57
ND	.1021373	.5978221	-10.9418	5.070107	.2598513	.6398823	-5.4244	3.5937

The above table 2 indicates the descriptive statistics like Mean, Standard deviation, Min and Maximum of Firm's performance (ROI) and other firm's specific factors like Leverage, Growth, Size, Risk, Tax, Tangibility, Liquidity and Non-debt tax shield (Depreciation) during the period 2005-2010 for Textile and Food sector of Pakistan on comparative basis. The above table indicate that short term leverage has an average (mean) value as 51% in case of textile sector's firm's performance while in case of Food sector it has an average (mean) value of 100% approximately. It means that short term leverage contribute more in case of food sector. While long term leverage showing (mean) value as 22% in case of Textile sector while in case of Food sector it shows 34% which also states that long term leverage also plays an important role in the determination of firm's performance in food sector better than textile sector. The firm's Size in case of Textile sector on average (mean) value showing 139% while in case of food sector it has 142% approximately. It means that firms in food sectors are larger in size.

The other factors can be analyzed with the same pattern of comparison between textile and food sector.

Table 2(a). Correlation Matrix for Textile Sector

	FP	S-LV	L-LV	GR	SZ	RK	TX	TN	LQ	ND
FP	1.000									
S-LV	-0.056	1.000								
L-LV	-0.132	-0.079	1.000							
GR	0.089	-0.109	-0.108	1.000						
SZ	0.137	-0.194	-0.129	0.223	1.000					
RK	0.057	0.003	-0.030	0.002	0.063	1.000				
TX	-0.003	0.026	-0.013	-0.003	-0.018	-0.007	1.000			
TN	-0.106	0.264	0.262	-0.277	-0.413	-0.041	-0.000	1.000		
LQ	0.039	-0.204	-0.121	-0.015	0.051	0.029	-0.036	-0.101	1.000	
ND	0.705	-0.044	-0.092	0.060	0.053	0.017	-0.609	-0.045	0.045	1.000

The above table 2(a) indicates the correlation matrix of dependent and independent variables in textile sector of Pakistan for the period 2005-2010. It indicates that short term and long term leverage including tax and tangibility having negative correlation with firm's performance while growth, size, risk, liquidity and non-debt tax shield having positive correlation with firm's performance in textile sector of Pakistan. The highest correlation is indicated between non-debt tax shield and firm's performance as 0.71 approximately according to the above table.

Table 2(b) Correlation Matrix for Food Sector

	FP	S-LV	L-LV	GR	SZ	RK	TX	TN	LQ	ND
FP	1.000									
S-LV	-0.164	1.000								
L-LV	-0.076	0.490	1.000							
GR	0.265	-0.088	-0.010	1.000						
SZ	0.227	-0.199	-0.097	0.168	1.000					
RK	0.042	-0.012	0.004	-0.023	0.003	1.000				
TX	0.076	-0.016	-0.023	0.072	0.084	-0.004	1.000			
TN	-0.172	0.047	0.126	-0.353	-0.353	-0.075	-0.150	1.000		
LQ	0.243	-0.125	-0.147	0.200	0.237	0.006	0.113	-0.286	1.000	
ND	0.978	-0.126	-0.057	0.285	0.162	0.013	0.059	-0.182	0.188	1.000

The above table 2(b) shows correlation matrix between dependent and independent variable of food sector of Pakistan for the period 2005-2010. It shows that Leverage (both short and long term) and tangibility having negative correlation with firm's performance while growth, size, risk, tax, liquidity and non-debt tax shield (depreciation) having positive correlation with firm's performance. The above table also indicates the highest correlation between non-debt tax shield and firm's performance as 0.98.

Table 3. Regression Results-One way fixed effect regression model

Dependent Variable = Firm's Performance (ROI)

Independent Variables	Textile Sector				Food Sector			
	1st Model (β_1=S-LV)		*2nd Model (β_1=L-LV)*		*1st Model (β_1=S-LV)*		*2nd Model (β_1=L-LV)*	
	Coefficients	P-values	Coefficients	P-values	Coefficients	P-values	Coefficients	P-values
S/L-LV	-.031593	**0.026	.0198823	0.221	-.002251	0.419	.009118	**0.034
GR	-0.014184	0.239	-.0124429	0.302	-.002579	0.751	-.002312	0.773
SZ	.018694	*0.000	.0188960	*0.000	.033499	*0.000	.032001	*0.000
RK	.001423	**0.023	.0014425	**0.021	.005855	*0.006	.005740	*0.006
TX	.007753	*0.000	.0077907	*0.000	.000260	0.956	-.000437	0.925
TN	-.007214	0.511	-.0116991	0.298	.029579	*0.000	.029295	*0.000
LQ	-.000747	0.843	-.0002636	0.944	.003988	0.551	.002653	0.687
ND	.294883	*0.000	.2966095	*0.000	.363463	*0.000	.365022	*0.000
C	-.250596	0.001	-.2707327	0.000	-.521193	0.000	-.503767	0.000
Observations	=834		=834		=234		=234	
No of Groups	=139		=139		=39		=39	
Overall Model Fitness	F(8,687)=325.51		F(8,687)=323.44		F(8,187)=910.53		F(8,187)=929.99	
	Prob>F = 0.0000		Prob>F=0.0000		Prob>F=0.0000		Prob>F=0.0000	
R2 (Within)	=0.7913		=0.7902		=0.9750		=0.9755	
R2 (Between)	=0.7833		=0.7926		=0.8827		=0.8752	
R2 (Overall)	=0.7847		=0.7866		=0.9533		=0.9521	
F-test that all u-i=0	F(138,687)=1.57		F(138,687)=1.54		F(38,187)=3.65		F(38,187)=3.94	
	Prob>F=0.0001		Prob>F=0.0003		Prob>F=0.0000		Prob>F=0.0000	
Hausman test	Prob>Chi2=0.000		Prob>Chi2=0.007		Prob>Chi2=0.0427		Prob>Chi2=0.0000	
Note: The current table is generated by the output STATA 11 regression result								
*significant at 1% level, **significant at 5% level, ***significant at 10% level								
S-LV=Short term leverage, L-LV=Long term Leverage, GR=Growth, SZ=Firm's Size, RK= Risk, TX=Tax, TN=Tangibility, LQ=Liquidity, ND=Non-debt Tax shield, C=Constant								

The above table 3 indicates results of one-ways fixed effect regression model estimation. The overall model is statistically fit and significant in both sectors. It indicates that short term leverage is significant at 5% level in textile sector and long term leverage is significant at 5% level in food sector both showing negative relationship with firm's performance and accepts the 1st hypothesis. The negative relation between leverage and firm's performance is also consistent with the following researchers like (Krisnan and Moyer, 1997; Zeitun and Tian, 2007; Onaolapo and kajola, 2010; Memon, Bhutto and Abbas, 2010). It indicates that firm's performance in textile sector is significantly influenced by short term debts and in food sector by long term debts. Growth is not significant at any level in both sector and showing negative relationship which rejects the 2nd hypothesis. However the negative relationship between growth and firm's performance is consistent with the similar findings of previous researchers (Zeitun and Tian, 2007). While the other researchers found positive relationship between firm's

performance and growth like (Krishnan and Moyer, 1997; Onaolapo and Kajola, 2010; Memon, Bhutto and Abbas, 2010). Firm's size is significant @1% level both in textile and food sector and accepts the 3rd hypothesis. This positive relationship is consistent with the following researchers like (Krishnan and Moyer 1997; Zeitun and Tian, 2007; Onaolapo and Kajola, 2010). It indicates that firm's size increases firm's performance in both textile and food sector of Pakistan. Risk is significant at 5% level in textile sector while it is significant at 1% level in food sector. In both sector it is showing positive relationship which accepts 4th hypothesis. This positive relationship between risk and firm's performance is also consistent with the previous researchers who found the same relationship like (Krishnan and Moyer, 1997; Memon, Bhutto and Abbas, 2010). It indicates that more risky firms tend to perform well in textile and food sector of Pakistan. Tax is significant at 1% level in textile sector and accepts 5th hypothesis it is also consistent with the similar findings by (Krishnan and Moyer, 1997; Zeitun and Tian, 2007; Memon, Bhutto and Abbas, 2010). However the tax is not significant in food sector. It means that firm's performance in textile sector is influenced significantly in textile sector but not in food sector. Tangibility is not significant at any level in textile sector but it is significant at 1% level in food sector with positive relationship and accepts 6th hypothesis. This finding of food sector is also consistent with the previous researcher with similar finding like (Nosa and Ose, 2010). It means that tangibility does not play a significant role for firm's performance in textile sector and having a significant and positive role for firm's performance in food sector which indicates that the performance of food sector is increased by tangibility. More tangible firms in food sector are performing well. Liquidity is not significant at any level in both sectors. It has negative relationship with firm's performance in textile sector that rejects the 7th hypothesis but in food sector it shows positive and insignificant relationship with firm's performance which accepts the 7th hypothesis. The non-debt-tax shield (depreciation) is significant at 1% level in both sectors and with positive relationship and accepts 8th hypothesis. It means that non-debt tax shield plays an important and significant role for increasing firm's performance in both sectors.

5. Conclusion and Recommendations

The researchers used the one-way fixed effect regression model as suggested by Baltagi (2005) to identify empirically the significant factors affecting firm's performance in Textile and Food sector of Pakistan. The current study concluded that firm's performance in textile sector of Pakistan is significantly affected by Short term leverage, size, risk, tax and non-debt tax shield. It is recommended to the textile sector that they should make their financial decision by considering the above said factors regarding firm performance in this sector. It is also concluded that long term leverage, size, risk, tangibility and non-debt tax shield are the important and significant determinants of firm's performance in food sector of Pakistan. The companies in food sector of Pakistan are recommended to consider the above said factor while making financial decision regarding firm's performance in this sector.

6. Policy Implications

The results of the current study implies that the textile sector has to direct their policies towards firm's size, risk, tax and non-debt tax shield for increasing their firm performance while short

term leverage decreases their performance. The study also implies that the food sector has to direct their policies towards long term leverage, firm's size, risk, tangibility of fixed assets and non-debt tax shield in order to increase firm's performance. All the above factors have a significant impact on firm's performance in their respective sector like textile and food.

7. Limitations and Suggestions

The current study is limited and applicable to non-financial industry of Pakistan only. It is not applicable to financial sector as their capital structure is entirely different from non-financial sector. The researcher used book value measure for dependent and independent variables. The future research on firm's performance may be made through market value measures like Tobin's Q etc. The future research may also be conducted on financial sector using the same models and variables.

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